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Twenty-five Years' Progress in Hospital Care

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CLEVELAND hospitals had the pioneer spirit in 1916 when they organized the country's first Hospital Council. In a few other cities certain activities had been carried on by hospitals as a group, but in none was there then an organization with so large an objective as the one in Cleveland. According to its By-laws, the Cleveland Hospital Council "was formed for the purpose of promoting the efficiency of, and cooperation between, the various interested hospitals, *to the end of better meeting the hospital needs of the community.*" The reason this Council has been so successful, I believe, is that from the beginning it was clearly understood by the people of the community that the object of cooperation among the hospitals was to facilitate their cooperation with the citizens in improving the health and welfare of the men, women, and children who live here. There was community spirit behind this organization.

Pioneering is always a very personal undertaking. When a project is well developed, the people connected with it can function to a certain extent as a group, but in the beginning personal leadership and vision are essential. In a paper read before the Seventeenth Annual Conference of the American Hospital Association at San Francisco on June 25, 1915, Dr. Andrew R. Warner, superintendent of the Lakeside Hospital of Cleveland, made some remarks which show that he must have been a prime mover in the pre-organization stages of this Council. For he said:

> "The idea of mutual cooperation between hospitals, as it is developing, is hopeful and prophetic. The very idea of active competition between hospitals, of a bitterness of feeling, and of any rivalry that is not abso-

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Delivered at a luncheon May 25 in celebration of the twenty-fifth anniversary of the Cleveland Hospital Council.

lutely free from thought of gain to self, and due simply to altruistic eagerness to serve better, is repulsive; it is entirely foreign to the purpose of all endowments, grants, or expressed tenets of purpose of any hospital. The public servant, institutional or individual, that reveals for an instant a selfish aim is instantly discredited. The union of hospitals to increase the ultimate service to the community is broadening in scope. New York hospitals have united to lessen waste in buying. Philadelphia hospitals have united in an effort to increase the individual efficiency of the institutions. The New York dispensaries have united for the primary purpose of increasing the combined contribution of all the local institutions to the public welfare of the community. The Cleveland hospitals are also doing this, and are helping each institution to fit its work to the others and to the existing needs, eliminating overlapping and wasted energy. Surely we may look forward to the day when all hospitals shall present to society harmonious, united service, adapted to the needs of the time in absolute unselfishness and with the greatest care."

We are still looking forward to that day, but we are much nearer to it than we were twenty-five years ago. In considering progress in hospital care during the past twenty-five years, I wish to emphasize my feeling that the strongest force in speeding progress in hospital care has been development of unity among hospitals. We have striven to make Doctor Warner's prophecy come true — that our hospitals should "present to society harmonious, united service, adapted to the needs of the time in absolute unselfishness." We have developed community, state, regional, national and international associations, and through them have made possible interchange of opinion and experience, and inspired hospital people to unite in raising the standards of hospital care.

Doctor Warner, from whom I have quoted, was in 1916 elected vice-president of the American Hospital Association and in 1918 elected president, and was appointed executive secretary of that body in 1919. Cleveland therefore gave to a larger field of cooperation a man who learned the value of unity in his work here. I single him out for mention as typical of the Cleveland spirit simply because I knew him so well. It was during my term as president, in 1924, that his valuable service to the American Hospital Association and to the hospitals of the country was ended by death. So firm a foundation did he and other early enthusiasts for hospital cooperation lay, that the American Hospital Association has continuously advanced to become the splendid organization that we have today under the wise leadership of Dr. Bert W. Caldwell.

Doubtless there are many others among the hospital administrators and other hospital personnel in Cleveland twenty-five years ago whose name should figure prominently among the pioneers in hospital cooperation. There was Frank E. Chapman, superintendent of Mt. Sinai Hospital, renowned for his memorable saying, "The hospital is but the lengthened shadow of its superintendent." There was A. D. Baldwin, first president of the Cleveland Council, who honors us by his presence today, as we honor him for his early leadership and long service to the Council. Still active among you is another whose work with the Council, in the organization of the Cleveland Group Hospital Service, and in the national association, is widely known—my long-time friend, in whose honor we unveiled a portrait on February 5 at the American Hospital Association headquarters—the Rt. Rev. Monsignor Maurice F. Griffin. And of course the mainstay of the Council has been its executive secretary, Guy J. Clark, whose vision and leadership have been prime factors in the success of the organization since his connection with it twenty-three years ago.

Improvements in Hospitals

Associating as I do constantly with physicians and surgeons, I hear many comments that reflect the medical viewpoint on the progress in hospital care. I believe you will be interested in this viewpoint, because you will realize that better hospital care enables the doctor to obtain better results in the treatment of patients. At a recent meeting, one of the Fellows of the American College of Surgeons said that when he began his medical studies in 1895, the hospitals of America were conducted in haphazard fashion; there was no real organization; the management had no standard to follow. Some hospitals, he said, gained a good reputation because of a superior surgeon working in them who required better organization, but such hospitals were looked upon as unusual, and no effort was made to copy them.

When the American College of Surgeons was founded in 1913, its organizers understood the necessity for improvements in hospitals. In their earliest program of activities appeared the intention to study hospitals and to encourage improvements. By 1918, considerable analytical work had been done, and the College was ready to embark on the program of Hospital Standardization which is acknowledged to have been a most potent force in hospital progress.

During the years 1918 and 1919, field represen-

tatives visited 671 hospitals of 100 beds or more in the United States and Canada, and of these 89 were approved as meeting the Minimum Standard in 1918, and 198 in 1919. There are ten fundamental principles in the Minimum Standard for Hospitals. By applying them to hospitals twenty-five years ago and to hospitals today, we can measure the progress that has been made. The fundamental principles are:

1 A modern physical plant, properly equipped for the comfort and scientific care of the patient.

2 Clearly stated constitution, by-laws, rules and regulations setting forth organization, duties, responsibilities, and relations.

3 A carefully selected governing board having complete and supreme authority for the management of the institution.

4 A competent, well-trained executive officer or superintendent with authority and responsibility to carry out the policies of the institution as authorized by the governing board.

5 An adequate number of efficient personnel, properly organized and under competent supervision.

6 An organized medical staff of ethical, competent physicians for the carrying out of the professional policies of the hospital, subject to the approval of the governing board.

7 Adequate diagnostic and therapeutic facilities with efficient technical service under competent medical supervision.

8 Accurate and complete medical records, promptly written and filed in an accessible manner so as to be available for study, reference, follow-up, and research.

9 Group conferences of the administrative staff and of the medical staff to review regularly and thoroughly their respective activities in order to keep the service and the scientific work on the highest plane of efficiency.

10 A humanitarian spirit in which the best care of the patient is always the primary consideration.

Elaborating on these principles, we find:

1 *Physical Plant.* Certainly it is easily apparent that the hospital of today is much better equipped for the comfort and scientific care of the patient than the one of 1916. The improvement is not entirely due to technical advances; some of it is a result of better appreciation of psychological factors. To illustrate: In 1916 an architect said in an address at Johns Hopkins Hospital:

> "While the medical profession and the hospital people consider it highly necessary that the sick should be surrounded by pleasant odors as against the older offensive smells of ether and iodoform, and while it is considered necessary that there be quiet in the hospital, yet no consideration is given to the patient's sense of sight. Glaring white walls, severely simple furniture, and absence of draperies and curtains and the little incidentals of home comfort, certainly impress the mind of the sick. Why would not pleasing sights and harmonious colors and agreeable forms serve to shorten the stay of the sick, and influence their recovery?"

In the years since, we have decided that they do, and we give more consideration to esthetic factors than we did when the architect voiced that criticism. Color and beauty of design have been introduced into our modern hospitals, along with many new devices that contribute to the patient's comfort and safety.

Almost everybody knows about the tremendous expansion in hospital facilities that took place in the decade between 1920 and 1930, reaching its height about 1929 when it was stated to have attained an expenditure of a million dollars a day for new construction. So rapid was the increase in the development of hospitals and equipment that today the investment represents a sum of more than $3,500,000,000. This is not too great for the needs, however, as 1940 statistics showed that average hospital occupancy was above 70 per cent and 30 per cent is not too large a margin for seasonal rises in demand. There is a registered general hospital within thirty miles of all but five counties in the United States which have a population density of five per square mile.

2 *Constitution and By-Laws.* In the past twenty-five years there has been a vast clarification of policies in our hospitals which has assured smoother working organizations. Rules and regulations setting forth organization, duties, responsibilities and relations are enforced today in all approved hospitals. The Cleveland Hospital Council has made a contribution to the entire hospital field by standardizing and unifying rules, regulations and policies as they apply to member hospitals, and as recorded in its "Book of Knowledge" as I call it.

3 *Governing Board.* The trustees of our hospitals are taking their duties with increasing

seriousness. The authority that is legally theirs in the management of the institution is more and more being assumed in actual practice. In former times the trustees used to focus their attention on the financial aspects of hospital operation. Now they are seeking ways of developing their understanding of hospital work — are attending meetings and conferences of the hospital and medical organizations. It is very important for the good of hospitals that their trustees be well informed, capable men and women who keep constantly in mind the entire function of the hospital — the best possible care of the patient and service to the community.

4 *Administrator.* There was in 1916 an awareness of the need for properly trained hospital administrators. A speaker at the 1916 Conference of the American Hospital Association said:

> "Whatever may have sufficed in the past, the institution for the sick, small or large, of the future will need apparently for its administration an educator, a scientist, a sociologist, and a good business man or woman, or one whose business it is to be a composite of all . . . "

We are far from having solved the problem of hospital administration, but we are advancing to a solution through the American College of Hospital Administrators, the Institutes for Hospital Administrators sponsored by the College and the American Hospital Association, and through university courses planned to prepare students for what is recognized today as an important profession.

5 *Personnel.* One of the first considerations in maintaining high efficiency of personnel is to make the proper allocation of duties. I think that to a large degree the complaint voiced in the following 1916 editorial has been overcome:

> "Serious difficulties in hospital administration are often due to the lack of a proper differentiation of the regular duties of the several departments. Nurses, for example, sometimes cannot resist the impulse to regulate the kitchen or laundry. Matrons occasionally are found who have overwhelming desire to assume the responsibility and direction of the nursing work, to the neglect of their own duties. Physicians sometimes long to undertake the distribution of pupil nurses in ward duty, and seek to instruct them and sometimes to discipline them. . . . The watchword of every large institution should be departmental independence, coordinated through the office of the head of the hospital."

I think that just as cooperation has proved so effective an impetus toward progress by hospitals as a whole, so cooperation within the hospital is essential to its successful operation. Well defined duties for each department should be designated, but this helps rather than hinders departmental cooperation. The doctor who is only in the hospital part of the time, the trustee who is only there occasionally, must learn to appreciate the viewpoints of full-time workers, who in turn must try to understand the doctor's and trustee's problems. In latter years hospitals have been giving increasing attention to improving working conditions and to providing opportunities for employees to advance in their respective vocations. At every hospital conference sessions are devoted to discussion of personnel relations.

6 *Medical Staff.* A speaker at the meeting of the Catholic Hospital Association in Milwaukee in 1916 said:

> "A man should not be appointed to a professional position because he is Catholic or Protestant, English or Irish, your friend or my friend, but only because he has the brains, the training, and the disposition to give honest, efficient, unselfish service to the sick intrusted to his care. . . . In the past the selection of the personnel of the medical staff in many of our hospitals has been justly open to much unfavorable criticism."

All good hospitals today make appointments to their medical staff on the basis of merit. They organize the staff under a chief of service, with department heads representing the various medical and surgical specialties.

And incidentally, of course, one great difference between the hospital of 1916 and the hospital of 1941 is the great increase in medical specialization. Before the first World War there were very few neuro-surgeons and thoracic surgeons and not nearly so many specialists in other fields. Since that time the Boards for the certifying of specialists have been organized. There are more than 20,000 specialists listed in the latest directory. The American College of Surgeons has a fellowship of 13,000 general surgeons and surgical specialists. The American College of Physicians has a fellowship of more than 3000 and 1200 Associates. Almost every specialty is represented in a distinct society. Specialization has complicated the work of the hospital but it has enhanced its power to save the life and restore the health of the patient.

7 *Facilities.* My entire talk could easily be devoted to a description of the improvement over

a period of twenty-five years in diagnostic and therapeutic facilities and in the technical service and medical supervision. X-ray was in its infancy 25 years ago. A professor of roentgenology at the New York Postgraduate Hospital and Medical School said in 1916:

> "It might seem that it would be unnecessary to argue for the value of the roentgen-ray laboratory as a diagnostic agency, but the state of this department in many American hospitals seems to indicate a rather tardy recognition of the service it can render in medicine and surgery, and the responsibility for this cannot be placed entirely on the management, for how can the lay officers be expected to appreciate the value of a well-organized department to the clinical service when medical men have apparently little exact knowledge of its field of usefulness?"

That knowledge has grown with the years. Today an institution without x-ray facilities, well organized and properly supervised, does not deserve the name of hospital. Practically the same statement may be made about the clinical laboratory. Its use and its serviceability have vastly increased in the quarter century since 1916. In every department of the hospital new procedures have been added that demand new equipment. Physical therapy and the apparatus connected with it, for example, were practically unknown in hospitals before the first World War. Oxygen therapy is new, and so with many other services.

8 *Medical Records.* In 1919 at Mount Sinai Hospital in Cleveland dictating machines were in use to expedite the obtaining of proper medical records. That was procedure a long way in advance of the times. Superintendent Frank E. Chapman said at a Hospital Conference of the American College of Surgeons in 1919:

> "Notwithstanding the fact that it costs in excess of $4000 a year to take care of our medical records, I can unqualifiedly make the statement that it pays. The spirit of cooperation among the men of the staff is wonderful. The number of consultations on service cases has increased approximately 150 per cent in the period of time that we have put these expensive records into operation. The number of additional diagnoses and original diagnoses that are made has materially increased. The number of institutional infections has decreased because the infection is called to the attention of the man at the time, and remedial measures taken to prevent a recurrence, rather than allowing the matter to go by default. The information that can be obtained by the attending men in looking up their past performance is certainly of value to them, and the protection to the attending staff and to the hospital cannot be measured."

Many a hospital in 1941 has not yet reached that state of mind or practice. We are constantly refusing approval to some hospital that is deficient in medical records. I could not today better state the advantages of proper medical records than this Cleveland hospital superintendent expressed them 22 years ago. The difference between then and now is, that Mt. Sinai was one of the isolated examples of good medical record keeping; today this is expected in every good hospital.

9 *Group Conferences.* In 1918 when we started Hospital Standardization, about 5000 medical staff conferences were being held a year throughout the country. Last year over 60,000 were held, and they were of much greater educational value than the type of conference originally held. Conferences for critical review of the work that is being done in the hospital are today required for approval. Experience is a great teacher, and only through regular staff conferences can the members utilize experiences of the past to improve their results in the future.

10 *Humanitarian Spirit.* I believe that the fact that we have put so much effort into giving the patient better care proves that a humanitarian spirit motivates hospitals. Yet we must constantly battle in our larger institutions the routine treatment of the patient. We have progressed in individualization of the patient — in ceasing to regard him as a "case" and a "number" the advance of medical science has helped in this by showing how differently patients may react to the same treatment — but we have a long way to go in overcoming institutional routine.

And thus, you see, we may take every principle of the Minimum Standard and point to widespread improvements that have followed its application. The same surgeon whose remarks on hospital conditions in 1895 I previously quoted said concerning hospital progress after twenty years of Hospital Standardization:

> "Only the few of us remaining who have had a special interest in hospitals for almost a half century, can fully realize the marvelous changes that have occurred in the hospitals of America. The evolution of our hospitals during the past twenty-five years will become one of the great historical facts of future medicine. People when ill today are seeking the standardize hospital; they have learned its service is best. The hospitals of

America are receptive to any means of improving their service."

Progress — Shown by Statistics — 1916 to 1941

Some general figures will best serve to illustrate the progress of hospitals in 25 years or less.

1 In 1918 the 5323 hospitals had 612,251 beds.
In 1940 the 6291 registered hospitals had 1,226,245 beds.

2 In 1916 there were at a given time half a million patients in hospitals.
In 1940 and today there are double that number — a million patients in hospitals. Every 3.1 seconds a patient enters a hospital.

3 In 1929 — only twelve years ago — there were 621,896 births in hospitals.
Last year 1,214,492 babies were born in hospitals — more than half the total births — and twice the number in 1929.

4 In 1916 the total daily expenditure of hospitals was $750,000.
In 1940 the daily payroll in hospitals was twice that amount — $1,500,000 — and the total cost of hospital maintenance in the United States and Canada was a billion dollars a year — four times the 1916 expenditure.

5 In 1916 the average stay of a patient in a hospital was 17 to 20 days.
In 1940 the average stay was about ten days.

6 In 1916 the death rate for the country as a whole was 14 per thousand.
In 1940 the general death rate was 10.6 per thousand.

7 In 1916 the hospital death rate was between 7 and 8 per cent.
Today the hospital death rate is between 3 and 4 per cent.

8 In 1916 the average length of life was 55 years.
Today the average life span is nearly 62 years.

9 In 1918, in the first list of approved hospitals, only 89 met the requirements.
In 1940 there were 2806 approved hospital in the United States and Canada.

These are not dry statistics. They reveal changed living conditions and changed attitudes toward the hospital. They reveal scientific, technical and ideologic progress as well as physical growth. They prove that hospitals have gone forward in public estimation as well as in appearance and performance. Demand for hospital service has grown with increased appreciation of its value.

Problems of Hospitals

I would leave no inference that hospitals are approaching perfection merely because they have come a long way in 25 years. It is to be hoped that they will make equal progress in the next quarter century. Because they are of particular present importance, I shall mention five problems that are receiving considerable attention at the moment:

1 Making hospital care available to the moderate income patient at minimum cost.

2 Improving arrangements for care of certain types of patients, especially convalescents.

3 Adapting hospital service to community needs.

4 Educating the public to appreciate the advantages of good hospital service.

5 Hospital preparedness.

Group Hospital Service Plans. The first problem seems to be best answered by the group hospital service plans that have been developed. By means of these nonprofit plans, groups of people may pay small amounts each month for hospital service to be rendered in case of need. This has proved to be a successful method of helping the person of average income to meet hospital bills. Six and a half million persons have in eight years taken out memberships in 67 approved plans in 28 states, which will pay hospitals $35,000,000 in 1941. Your Cleveland Hospital Service Association under the splendid leadership of Director John A. McNamara and his competent associate, Michael A. Kelly, has in seven years enrolled more than 480,000 people, which is 35 per cent of the population of the area in which it operates. This is the largest percentage of population of any plan in the United States. This plan operates at the low cost of 6½ per cent of its earned income—a low cost made possible through the cooperation of Cleveland citizens. Mr. McNamara is convinced that the saturation point is at a much higher percentage than has yet been reached, and that the cost of operation may be further reduced.

Convalescent Care. As to the second problem, improving arrangements for convalescent care, I find that in his presidential address in 1916 to the American Hospital Association, Dr. Winford H. Smith of Johns Hopkins said:

> "We know that, after the acute stages of illness, both medical and surgical patients would do quite as well in less elaborate surroundings; indeed, we know that they could be just as well cared for at less expense, and would be infinitely happier, if they could be moved to a convalescent hospital. It might not be over-stating the fact to say that under such conditions the period of convalescence could be shortened and the end result bettered."

This is an interesting statement of a problem that has grown with the years. Just last fall at the Clinical Congress of the American College of Surgeons in Chicago we devoted an entire session to consideration of care of the convalescent patient. I notice that in Cleveland you are conscious of this problem. In the booklet prepared for the

anniversary celebration of the Hospital Council I find the following statement in connection with the findings of the Mayor's Advisory Committee on Health and Hospitals which was appointed in 1940:

> "The facilities for the care of chronic and convalescent patients in the metropolitan area are inadequate and this is a problem which needs immediate consideration. This situation, however, is not much different from that in other urban areas throughout the country. If more and better facilities were available for the care of the chronic and convalescent in this community, it would release beds now occupied by these patients in general hospitals and at less cost to the community."

That is a true statement, which points to a needed activity.

Community Service. As to my third problem, adapting hospital service to community needs, they were conscious of this responsibility in 1916, for we find Doctor Smith stating:

> "We need to study and to understand the broader relationship of the hospital to the community. That we have begun to appreciate this broader usefulness is evidenced by the inauguration of social service work, incating that we are no longer content to ignore the relationship of the individual to his family, to previous environment, to the community, and to post-hospital environment and opportunities . . . In the great public health movement the hospital, with its opportunities for intensive work, with its trained clinicians and investigators, and its many points of contact with the community, occupies an important, indeed a strategic, position."

In Cleveland you have been for many years acting on this theory. The Hospital Council here undertook one of the first surveys made in the United States of hospitals and health conditions. That was in 1919. I understand that the recommendations and suggestions contained in the final report resulted in changes in procedure in the hospitals and dispensaries, that stimulus was given to many plans under consideration, and that it brought many changes and improvements in the individual hospitals and a general improvement of standards of hospital service.

Public Relations. The fourth great problem with which hospitals are today especially concerned is the inculcation of better public understanding of the complete purposes of the hospital as a health center. Upon such understanding depends continued financial support of the hospital. Large endowments for voluntary hospitals by individuals are not so common as they were in the past; a larger number of donors must be reached to assure the same sums formerly contributed by a few. The tax supported institution also must have the taxpayers' good will, earned by knowledge that politics do not govern its conduct. Several years ago the American Hospital Association began to encourage hospitals to pay more attention to public education and formulated a code of ethics for hospital public relations. Many hospitals have instituted definite public relations programs, sometimes with a special person in charge of this work, to interpret the hospital to the community and to keep the public viewpoint before the hospital officials.

Hospital Preparedness. My fifth and final hospital problem is one into which all of the others converge—Hospital Preparedness. The defense program demands first consideration by all of us today. How much better prepared for national emergency of any kind are our hospitals today than they were for the war that descended on them in 1917? We find Dr. R. R. Ross of Buffalo General Hospital saying at the conference of the American Hospital Association in 1916:

> "Our hospitals, at the present time, have no affiliation with plans of preparedness. Should the time ever come when it is necessary for us to engage in a war, we would be called on for service along lines for which we are not organized or prepared. Is it not time that we give some thought to this matter? We could be of great service to our country at such a time of strain or distress. Two or three hospitals have taken up the matter with the proper officials and have made a beginning. We suggest that the presiding officer appoint a committee to make a survey of this matter and report at the next meeting of the association—not only a plan for base hospitals, but whether it is feasible to work out some scheme in which all can cooperate."

That was on September 27, 1916. On April 6, 1917, the United States entered the War. This speaker had the distant future in mind when he said, "Should the time ever come when it is necessary for us to engage in a war." The time came with tragic suddenness for hospitals, as it did for the whole country. In many hospitals service was disrupted by the unplanned for loss of personnel which occurred immediately. Appointing a committee to make a survey and render a report at the next meeting a year hence is a futile procedure when a World War is raging. I think we

learned that lesson 25 years ago, but not fully—too many hospitals today are not taking preparedness seriously.

In a recent magazine article the statement is made that war is the art of spreading disease and other misery. Does not that statement make clear the long-time rule ahead of the hospital in combating the effects of the war, besides the immediate necessity for preparedness?

In 1941 we are "affiliated with the plans of preparedness." The Health and Medical Committee of the Federal Security Agency has a subcommittee on hospitals of which Dr. Winford Smith is chairman and on which I am serving. The aim is to spread the realization that total war demands total preparedness—that every hospital needs to put forth the extra effort necessary for defense. Problems concerned with prospective shortage of nurses, interns, and other medical and general personnel in hospitals are under advisement by this committee.

It is by the degree of preparedness which they show under the stress of the defense program that we can best judge the progress of hospitals in 25 years. I am sure, very sure, that our hospitals are much better prepared for whatever emergency they may face in the future, whether peace or war, than they were for war in 1917. Their resources in both equipment and personnel are known today. Many of them have hospital units organized. Most important, they are united for action as they never were before—united through national associations and through local councils such as this one in Cleveland. The very existence of this Council is a preparedness measure. After twenty-five years of usefulness it is solidly welded into the life of this community which it has helped the member hospitals to serve more fully and efficiently. To Cleveland hospitals I would say, in the words of the "Song of Hiawatha,"

"All your strength is in your union."

That strength belongs to the nation as well as to Cleveland. There is no isolationism in the hospital world. The accomplishments here have not been kept secret, but have been recounted in hospital circles and duplicated in many other communities. You pioneered, and a host of communities have followed you into the promised land of larger opportunity opened by group endeavor. My best wishes are with you for a new 25-year and much longer period of increasing usefulness to your city and the nation. May you never turn back, but go on to new fields to conquer by concerted action in behalf of the sick, the injured, and the infirm of this beautiful and progressive metropolitan area. Cleveland has led the way and I predict for you continued leadership in hospital progress.

Important Memorandum

Editor's Note: The needs of the country for armed forces and for graduate nurses is urgent. The following memorandum by Dr. Irwin Abell, chairman of the Health and Medical Committee of the Federal Security Agency, addressed to all employers of registered nurses, calls attention to this need and requests hospitals and other institutions to use their best efforts in encouraging registered nurses to begin this type of pedagogic duty, and to employ nurses who have been inactive to replace those nurses who have been called into active military service:

Through the Red Cross Nursing Service, thousands of the Nation's finest young nurses are being recruited to serve with the rapidly expanding medical departments of the Army and Navy.

In many instances this recruitment program will inevitably leave gaps in the facilities of civilian hospitals and health services that can be perhaps only partially filled. Yet, during these days of emergency, preparations for total defense require that every institution and organization be willing and prepared to make extensive sacrifices.

Nurses in encouraging numbers are making their sacrifices by giving up a year of their civilian career for a tour of patriotic duty. In order to further encourage and stimulate the recruitment of nurses for the military services, I would urge hospitals and other organizations employing nurses to:

First: Encourage their nurses to offer their services to the country and arrange, wherever possible, for holding their positions until they return to civilian life from their year of service.

Second: Institute, or, in conjunction with other organizations support, "refresher" courses for nurses who are now inactive but otherwise competent and experienced for nursing staffs. Such women are being discovered by the nation-wide inventory of nurses.

Third: Many of these inactive nurses already have signified their willingness to return to duty during the emergency. I would urge the temporary employment of this type of nurse to substitute for members of your staff called to military duty. By this method, no serious disruption should occur in the operations of your agency or institution.

Medical Service of the Army of the United States

Certain Personnel Problems of the Current Military Program

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THE 76th Congress, in declaring that it is imperative to increase and train the personnel of the armed forces of the United States, on September 16, 1940, authorized the induction into the Army and the Navy of 900,000 selectees each year. Of this number, approximately 800,000 will receive 12 months' training in the Army and then will pass to the Organized Reserve for mobilization in the event of a national emergency. The training of this group will be accomplished by individuals and units of the Regular Army and, during this year, those of the National Guard of the United States. The total strength of this composite Army of the United States will be 1,418,000.

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Medical Department and Personnel Requirements

The mission of the Medical Department of the Army under this program includes medical service and hospitalization for all troops, the special Medical Department training of approximately 50,000 selectees, and the organization and training of medical detachments and units for certain combat and service units of four field armies, the Armored Force, the Air Corps and General Headquarters Reserve. The number of medical officers required for these purposes is computed at 10,250. Should a national emergency arise necessitating a mobilization of the available manpower of the nation (approximately 4,000,000), the number of physicians in the military service will be increased to over 32,000.

To meet the personnel requirements of the present program the Medical Corps of the Regular Army furnishes 1230 medical officers and the National Guard of the United States, while in Federal service, about 1150. The remaining officers must come from the Officers' Reserve Corps of the Organized Reserve. Since existing legislation authorizes the employment of this reserve, without the consent of the individual, for 12 months only, it is seen that numerous factors enter into the computation of the number of physicians who will be called into military service during the operation of the Selective Training and Service Act of 1940.

At least 9000 Reserve medical officers must be constantly on extended active duty. The number to be replaced each year will depend, of course, upon the number on duty who voluntarily request an extension of their 12 months' compulsory military service. It is hoped that the duty of at least 5 per cent will so be extended each year.

It is thus seen that the present Medical Corps Reserve of aproximately 14,000 will be exhausted in 1942, and that thereafter 4500 replacements must be procured each year. Indeed replacements must be procured as rapidly as possible because of the number of Reserve officers who, when ordered to active duty, are found to be physically disqualified or, in the case of lieutenants with dependents, avail themselves of their prerogative of resigning because of dependents. To this number must be added each officer who for any reason whatsoever is granted deferment: another physician must be procured to take his place in the military service.

Procurement of Medical Officers

The annual procurement of 4500 medical officers will be no easy task. The logical source is that group of younger physicians who, at the expiration of medical training, have not yet entered into private practice. Although eligible for appointment in the Medical Corps Reserve on graduation from approved medical schools, these appointees are not eligible for extended active duty until they shall have completed at least one year of hospital internship. In the case of those whose

internship begins in January, orders for active duty may be deferred until the following January. The deferment of such duty for those pursuing additional postgraduate training will depend upon the numerical requirements for medical officers. It is hoped that it will not be necessary to interrupt residencies which will be completed within a reasonably short period. However, the exigencies of the present situation practically preclude prolonged deferment for special traiinng. It is felt that after one year's internship additional postgraduate medical training should be deferred rather than military training.

Procurement of additional officers will be accomplished under existing peacetime provisions for appointment in the Medical Corps of the Regular Army and in that of the Officers' Reserve Corps. Appointment in the Regular Medical Corps is through competitive examination of applicants who at the time of examination are not over 31 9/12 years of age. No change in this procedure is contemplated. Appointment in the Medical Corps Reserve is limited to the grade of lieutenant and is accomplished as follows:

a) Senior medical students; on graduation, upon certification and recommendation by the dean. At those schools which require a fifth clinical or hospital year, the prospective graduate may be certified for appointment upon completion of the prescribed four-year course of instruction, or the granting of the degree of Doctor of Medicine. This procedure is not authorized for students in Canadian schools.

b) All others; upon examination of credentials by boards of officers appointed by the Commanding General of the Corps Area in which the applicant resides. All applications, including those of physicians over 35 years of age, who are registrants under the Selective Training and Service Act, should be forwarded to the Corps Area Commander at least three months before the date on which the applicant will be available for active duty. Application will be on the prescribed form and will be accompanied by a report of complete physical examination, and by at least three letters of recommendation to establish professional, ethical and moral standing. License to practice in a state, territory or the District of Columbia is required of all applicants who have completed their postgraduate training.

Appointment After Induction

Although qualified applicants for appointment in the Medical Corps Reserve may be commissioned subsequent to their induction into the Army, considerable time will be required for the consummation of such appointments. During this time the physician, serving as an enlisted selectee, may not be utilized by the Medical Department in his professional capacity.

Students and Physicians Residing Abroad

Citizens of the United States residing abroad (including those in the Dominion of Canada) cannot be appointed while outside the United States. They, however, may forward completed applications to the Commanding General of the Corps Area in which their permanent home is located, requesting examination there or elsewhere, upon their return to the United States.

Reclassification by Selective Service

Upon receiving a commission in the Officers' Reserve Corps, the appointee should notify the local Selective Service authorities in order that he be reclassified.

Extended Active Duty

Orders placing Reserve officers on 12 months' extended active duty are issued by the headquarters having assignment jurisdiction. The majority of officers are under the jurisdiction of the Commanding General of the Corps Area in which they reside; a certain number are under the jurisdiction of the Surgeon General. In each instance deferment is a function of the office concerned. In so far as possible, consideration has been given to the officer's statement regarding immediate availability. All future appointees must be available immediately for duty upon reasonable notification.

Physical Examination

To avoid various difficulties which may arise regarding physical disqualification for duty, all officers are either requested to obtain a final type examination at the nearest Army station prior to issuance of orders, or are ordered thereto before being sent to a permanent assignment.

Tactical and Professional Duty

Assignments to duty may be either to a hospital or to a tactical or training unit. Provisions have been made for rotation of such assignments in so far as possible after six months of service. Officers desiring service with overseas garrisons may be so assigned upon their agreement for two years' active duty.

Affiliated Units

Officers assigned to affiliated units are available for extended active duty only if they were not commissioned in the Reserve Corps, and in their present grade, for the purpose of assignment to the unit. The latter hold affiliated appointments and are not eligible for extended cative duty until the unit is activated. This is not contemplated

in connection with the training and service program. The type units being organized through affiliation with medical schools and large hospitals are designed for the care of battle casualties and for non-battle casualties occurring in the theater of operations. Therefore, it is reasonable to believe that those units will only be activated when military operations are anticipated. To further the training of personnel of affiliated units it is contemplated that certain officers will be offered 28 days' active duty this summer in large station hospitals and named general hospitals for the purpose of familiarizing themselves with the accepted administrative procedures in military hospitals.

Miscellaneous Information

1 Routine appointments in the Medical Corps Reserve are not being made above the age of 37 and above the grade of first lieutenant except in the Affiliated Reserve.

2 No appointments are being made in the Dental and Veterinary Reserve except from among those qualified applicants who have been inducted into the Army.

3 No appointments are being made at this time in the Sanitary Corps Reserve.

4 Effective March 4, 1941, no enrollments are authorized in the Army Extension Courses for the purpose of qualifying for appointment in the Officers' Reserve Corps. Appointments in the Medical Administrative Corps Reserve (Non-Affiliated) will therefore be from among qualified selectees only, who after 6 months' service satisfactorily complete the prescribed 3 months' course at the Officers Candidate School for Medical Administrative Corps. These appointees will then be required to perform 12 months' duty as commissioned officers.

5 In the event of a national emergency (general mobilization) peacetime restriction on appointments will doubtlessly be removed. Appointments at that time will be above the present age limit and in grades authorized for positions for which the applicants are professionally qualified. As a result of the recent nation-wide survey conducted by the Committee on Medical Preparedness of the American Medical Association, it is anticipated that the Surgeon General and Corps Area Surgeons will be furnished, on call, the names of applicants who are eligible and qualified for appointment for specific assignments and who may be ordered to active duty without undue disruption of the medical service of civilian communities, industries, medical schools and hospitals, and various Federal, State, County and municipal health agencies.

6 Deferment of military training of medical students: In view of the desirability of postponing the 12-month obligation for military service in the case of medical students, it is hoped that recent provisions made by Selective Service will result uniformly in placing bona fide medical students in Class II (occupational deferment). Provisions are in effect whereby the active duty of Reserve officers studying medicine may be deferred through their voluntary transfer to the Medical Administrative Corps Reserve for assignment to the War Department Reserve Pool until qualified for appointment in the Medical Corps Reserve.

Dr. Henry K. Mohler

Dr. Henry K. Mohler, dean of Jefferson Medical College, Philadelphia, Pennsylvania, and for twenty-four years medical director of Jefferson Hospital, died on May 16 at the age of 54.

During Doctor Mohler's twenty-four years of service as medical director of Jefferson Hospital, the hospital's work has more than doubled. During those years he also served the college successively as head of the laboratory of clinical medicine, instructor, demonstrator and associate in medicine, assistant professor of medicine, associate professor in medicine and clinical professor in therapeutics. Since 1938, in addition to holding the deanship, Doctor Mohler was Sutherland M. Prevost Professor of Therapeutics.

Doctor Mohler was a veteran of the World War, having served as a captain in the Medical Corps of the United States Army and chief of medical service at Base Hospital 38. After the war, he was commissioned lieutenant colonel and was given charge of General Hospital 38, United States Army Reserve Corps.

George F. Sauer

George Sauer, an active life member of the American Hospital Association since 1918, and superintendent of the Stamford Hospital, Stamford, Connecticut, for nine years, passed away recently.

Blood Banks—Organization and Administration

E. H. L. CORWIN, Ph.D.

THE idea of blood banks originated in Red Russia. It was in keeping with that country's grim psychology that the blood which was first used for storage was that of deceased persons, particularly those who, while in good health, had died by accident, physical or political, and I have a suspicion, perhaps unwarranted, that those who die of the latter kind of accident exceed those who die of physical accidents. There are some peculiarly desirable qualities of fresh cadaver blood which I need not discuss at the present time, primarily because the idea of using cadaver blood would not be particularly popular with us, no matter how good the qualities of such blood may be.

Inauguration of Blood Banks

The storing of blood of friends and relatives of patients and using it for transfusions was inaugurated in this country four years ago by the late Dr. Bernard Fantus at the Cook County Hospital in Chicago. Doctor Fantus was, I think, also responsible for the commercial appellation of "bank" as applied to the deposit and withdrawal of blood in a hospital. I personally dislike the name, for although it connotes give and take transactions as well as a service to the community, it also smacks of interest and profits, and these concepts are, of course, foreign to the field of hospital service. As a matter of fact, I do not know whether it is because of the name of "bank" or because of the opportunity that afforded itself, that some blood banks are operated on commercial principles and some of them, I am told, have fallen into the ugly business of usury. Of this I have no first hand knowledge.

Nevertheless, the State of Colorado is apparently exercised over the possibilities of blood bank "profits" and a sales tax similar to that imposed on the sale of other tangible personal property is said to have been tacked on blood bank transactions. This, however, may apply only to commercial companies, although it seems doubtful that there should be any commercial business in whole blood because of its perishable nature, so it must apply either to the sale of whole blood to patients in hospitals or to the sale of blood plasma or serum by commercial firms. Be this as it may, the blood bank is an important new development, and like all new developments, requires careful guidance to guard against abuses in the clinical as well as financial sense of the word.

The Author

● E. H. L. Corwin is Executive Secretary of the Public Health Relations Committee, The New York Academy of Medicine, New York City.

I am proposing in this brief paper first to discuss the reasons for blood banks and their place in the scheme of things, and second, to lay before you for consideration the principles which in my judgment should be followed in the operation of the "banks." I wish to make it clear that whatever I have to say on this subject reflects my own opinion and does not represent the views of any of the organizations with which I am associated.

Reasons for Blood Banks

Every one knows that a healthy human body is the best container for blood. The minute blood leaves its natural container it begins to deteriorate until, even under the best of conditions of refrigeration, preservation and care, it ceases after a time to be fit for transfusion purposes. The cells, platelets, electrolytes and other constituents of the blood disintegrate; potassium is released from the red cells in increasing amounts, and after the tenth day there is a possibly dangerous concentration of it in the plasma; and finally hemolysis sets in. Doctor Fantus, the originator of the banks, warned against over-enthusiasm in the use of stored blood. He said.

> "It must be remembered that the preservation of living white corpuscles or platelets has not yet been perfected. Therefore, when white corpuscles are needed, nothing but fresh human blood will serve the purpose. The blood platelets are not sufficiently preserved to be of much use in sepsis or conditions due to blood platelet deficiency."

If donors were readily available for all types of emergencies there would be no need for preparing and storing blood in refrigerators, with all the work and control that this entails. Unfortu-

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nately in the experience of hospitals, there are many emergencies calling for immediate availability of blood which neither a relative nor friend nor professional donor is able to meet with sufficient dispatch. Although these cases are not numerous, yet to the individual who requires an immediate transfusion, even a short delay may prove fatal. That is one of the reasons for the blood banks.

Another reason, less dramatic but very practical and ubiquitous, is the convenience of the blood bank. Under the blood bank system, which by the way does not and should not preclude man-to-man transfusions, the work of examining and typing of donors, of cross-matching, of serological testing, can be done at stated times and need not interfere with the routine of the hospital laboratory.

After the serological test for syphilis has been made and the sterile containers are placed in the ice box, which is set at an optimum temperature, the blood is available for use at any time of day or night. The economy of the "bank" is problematical; it is noticeable in institutions, whether tax maintained or voluntary, where formerly many professional donors were used for ward patients. However, in hospitals which made it a practice not to use paid donors and to rely entirely, or nearly so, on friends or relatives of the patient, there is no economy in the employment of blood banks. There is no doubt that the operation of a properly organized bank costs a considerable amount of money and is practical only in larger institutions, and even in such institutions the bloods of rare groups would hardly be available at all times, and donors would have to be obtained for patients of these rare types. In New York City where the three basic methods of blood transfusion technique have been developed, and where transfusions have been given to a larger extent than in any other community in this country, and where a blood transfusion betterment association was organized twelve years ago with a view of placing the business of blood transfusion on the highest ethical and scientific level, there are very few blood banks in existence outside of the municipal hospitals which introduced this method of administration as an economy measure.

The City of New York has been very generous with transfusions to its sick poor who had no relatives or friends from whom to secure blood. In the year prior to the establishment of blood banks, the purchase of blood by the municipal hospitals from professional donors amounted to about two hundred thousand dollars. Among the voluntary hospitals of New York the stimulus for blood banks came last year largely from the experiment which was carried on by the Blood Transfusion Association in securing blood plasma for Great Britain.

Costs of Stored Blood

I have tried to secure from these institutions comparable figures of costs per 500 cc. of stored blood, which is the average amount used in a transfusion. Mt. Sinai Hospital has had the longest experience with a blood bank and the cost of its operation was published in the January issue of *Modern Hospital* for this year. I may add that at Mt. Sinai Hospital the blood bank is used for ward patients exclusively. The cost of its operation has been ascertained in accordance with well established principles of unit cost determination. It includes the salaries of the personnel, which consists of four physicians, six nurses, three ward helpers, two technicians, porters and dish washers, all on a part time basis; the cost of supplies such as jars and syringes, rubber tubing, bandages, alcohol, chemicals, antigens for the serological tests, linens, stationery, etc., and the indirect costs properly pro-rated, of laboratory services, refrigeration, electric current, housekeeping, administration, insurance, auditing and other items. The indirect costs were estimated conservatively because it is realized that had the blood bank not existed it would not have made an appreciable saving to the hospital in the items included in the computation under this heading, except for the rather high initial cost of a refrigerator. In the year 1939, at Mt. Sinai Hospital of New York, 1910 blood bank transfusions were given at a total cost of $8,297.73, or $4.34 per transfusion. Against this figure I have checked the experience of the other voluntary hospitals which keep accounts and are willing to disclose them, and I have found that in some hospitals the cost was a little higher than that reported for Mt. Sinai and in others it was somewhat lower. The differences may be due to differences in the apportionment of salaries, wages, and of indirect costs.

The data available are sufficient, however, to make us realize that even though the blood itself is contributed free of charge by relatives and friends of patients, it nonetheless costs quite a bit to take it from the donors, test it, and process it in a way which ensures a sterile and safe product. Parenthetically, I want to emphasize the need of greatest care in handling and labeling the blood; of using a thoroughly surgical technique throughout; let alone the matter of dealing kindly and courteously with donors lest they lose faith in the integrity and good will of the hospital.

Eight Principles Governing the Administration of a Blood Bank

Now as to the principles which should govern the administration of a blood bank:

First: It should be made clear to each donor that the blood he donates is not going to be given to the patient in whom he is primarily interested because his blood may not be of the same blood group as that of the intended recipient, and in case of an emergency there may be no time for all the necessary tests, and blood of some one else will have to be administered instead.

Second: In order to keep an adequate reserve in the bank, the relative or friends must give about twice the average amount of blood needed for a transfusion. They should be made to realize that some of the blood given may be discarded because of the presence of infectious agents in it; accidents must be provided against (the container may break or the blood may become contaminated and therefore unusable); and then, frequently more than 500 c.c. may be needed for the patient.

Third: All patients should pay a blood bank service charge. If it is impossible for a ward patient to do so, the amount should be charged to charity, as is done with so many other items of expense in a hospital.

Fourth: Semi-private or private patients needing transfusion and willing to accept stored blood from the blood bank should be made to procure donors in the same way as the ward patients, except that in the case of semi-private and private patients the service charge may be made higher than in the case of ward patients, just as in any other services there are higher rates for semi-private and private patients than for ward patients. In other words, the same principles that apply to charges for laboratory work or operating room or x-ray work may apply to the service charge for a blood bank transfusion. In no instance, however, should a private or semi-private patient receive blood from the blood bank if a suitable blood donation has not been forthcoming from his friends or relatives. In other words, *no blood donated for ward patients should be sold to private or semi-private patients.* It may create ill feeling, and may be regarded as a "racket," if I may use a popular expression. Such use of donated blood cannot be justified on ethical grounds.

Fifth: In making the service charge, the hospital is justified in allocating to it all the direct and indirect expenditures including the salary of the physician in charge of the transfusion service and of his assistants. At this point I should like to suggest that the blood bank should be regarded as a branch of the surgical division rather than of hematology or of the Hospital Laboratory. As a matter of fact it may be best not to regard it as an auxiliary of any department, no tail to any kite, but a department all by itself in charge of a team of specialists.

There is a difference of opinion as to whether or not the donor should be subjected to physical examinations, blood pressure determinations, etc., aside from casual observation; the taking of a history to exclude those who have had malaria, for example; and of course the serology test of syphilis. The experience of one of the larger blood banks in New York indicates that physical examinations of donors may be dispensed with; apparently the average person experiences no untoward effect from donating blood. In all instances release from responsibility should be signed by the donor.

Sixth: No blood bank can operate successfully without a continuous supply of blood. The commodity, which is highly perishable, needs constant replenishment. In general blood should not be kept longer than ten days in the "bank"; after that, it becomes a "frozen" or questionable asset.

A large vibration-proof refrigerator composed of two sections separated from each other along a perpendicular axis is the most essential part of the equipment of a blood bank. Such a refrigerator costs anyhwere from $1200 up. One part of the refrigerator should be devoted exclusively to storing of bloods as they come from donors, with pilot bottles for testing purposes attached to the containers, and the second part to bloods which have been passed on as suitable for transfusion, that is, after the serological and bacteriological tests have been made. For the sake of avoiding accidents the containers should have tags of different colors attached to them, indicating the blood group, although this information should also be stated on the label of the container.

Seventh: It is impracticable to organize a central blood bank for the use of several hospitals because of the injury to the blood caused by shaking in transportation. Further scientific explorations may solve this present difficulty. Some valuable observations have already been reported which may lead to the removal of present day difficulties in this regard.

Eighth: The plasma of the bloods which become too old for transfusion purposes may be siphoned off under strictly sterile technique and safeguarded for use in proper circumstances.

In this brief paper, I have referred only to the high spots. I think, however, that I have said enough to make you realize that there is need of a great deal of preliminary thought and study before a blood bank is launched. It should not be undertaken without adequate preparation, adequate equipment, adequate organization, adequate clinical resources, adequate staff and a sound policy of procedure.

Voluntary Hospitals for Profit Only

S. S. GOLDWATER, M.D.

BY a surprising confession of hospital faith, a distinguished hospital administrator endeavored recently to convince his hearers at a State convention that the voluntary hospital must choose between losing its shirt and losing its soul.

The discussion revolved around the relations between hospitals and hospital service plans. Disregarding the charitable motives which inspired the voluntary hospital system and ignoring the meaningful distinction between service plans for semi-private patients on the one hand and contributory plans for ward patients on the other, the speaker argued that all hospital service plans must be administered with an eye to profit, that no voluntary or community hospital participating in any pre-payment plan should be expected to render service at a loss. Have we so soon forgot that it was "nonprofit community sponsored plans" for persons of moderate means that the American Hospital Association undertook to promote and support?

That successful hospital service plans have increased the stable income of community hospitals is well known; that such plans, when open to subscribers of ample and even of moderate means, should fully reimburse hospitals for carefully calculated maintenance costs, no one will deny. They are doing so all along the line, and they will continue to do so. No one would have it otherwise.

Whether it is playing the game for community hospitals to demand profits from a semi-private service plan which has been widely advertised as a "nonprofit plan for persons of moderate means," is at least open to question. Might not such a course react unfavorably on the reputation of the sponsoring American Hospital Association? If relentlessly pursued, might it not hurt voluntary hospitals locally by changing their social meaning, and endangering their legal immunities.

Certainly no demand for a profit basis should be accepted by an approved plan without the prior sanction of this new and revolutionary principle by the American Hospital Association. But when cost-plus-profit is laid down as an indispensable condition of participation by a voluntary, charitable or community hospital in a contributory plan for workers in the lowest income brackets, a group who have always been regarded as the logical beneficiaries of voluntary hospitals, an issue is presented on which there can be no compromise.

The Author

● Dr. S. S. Goldwater, formerly Commissioner of Hospitals of Greater New York, is President of the Associated Hospital Service of New York City.

Not many months ago the following rule was laid down by an administrative board composed of the old Commission on Hospital Service and the Council of Hospital Service Plans of the American Hospital Association:

> "Payments to hospitals should be based on the costs of services provided to subscribers in hospitals of that community, district or region. *This does not preclude the possibility of developing public ward-service plans for employed groups with low incomes, and agreements by member hospitals to provide service at rates less than the full operating costs.*"

Anything wrong with that?

There are voluntary hospitals that have not completely forgotten the tradition of charitable service, communities in which, within the limts of such means as are still available, efforts are made to pool the resources of all social classes so that needed hospital service can be offered to the poor and lowly on terms within their means.

Charitable donations may have diminished, the once freely flowing stream may have become a mere trickle. If so, cannot new springs be found and directed into the proper channel? Or, accepting defeat without a struggle, shall we proceed with indecent haste to convert the bed of the stream into a smooth road for the chariot of commercialism?

Despite all our efforts, donations and bequests may continue to diminish; if they do, the volume of free and part-free hospital service must decline proportionately; but the time has not yet come either to scuttle the voluntary hospital, with its precious cargo of charitable good will, or to raise a piratical flag reading "For Profit Only!" May the voluntary hospital save its shirt and its soul.

Personnel Organization

Massachusetts General Hospital

MORTON ORLOV

A VERBAL description of the interlocking connections between any large group of people who work together is often confusing. In the following charts, an attempt has been made to show diagrammatically the exact location of each of the various positions of the individuals connected with the Massachusetts General Hospital (inclusive of the Out-Patient Department, Baker Memorial, and Phillips House).

There are approximately 2432 people, including 1586 paid employees, 298 non-paid employees and staff doctors, 467 students and 81 volunteers, connected with the hospital. By glancing over the index, one cannot help but get an impression of the hospital as being a separate community in itself, with a representation of all types of workers found in any metropolitan area.

A picture of the coordinating lines of communication, as they are shown on the following pages, may readily serve as a blueprint of the working organization. Without doubt, there have been changes in some of the departments since this study has been made. In general, however, it represents the organization as it is in its basic structure.

By using the cross references appearing on the charts, one should be able to follow the delegation of authority with very little difficulty. Each chart is numbered with a Roman numeral. Wherever else on the charts such a number appears, it is a cross reference to some other chart on which the department is given in detail or it refers to the chart in which the connection between the departments is given. The Arabic numerals appearing throughout indicate the number of employees in that particular classification.

There is also listed on each chart a total number of paid employees, non-paid employees and volunteers. The totals are all cumulative. For example, the total appearing on the Nursing Department chart of the Massachusetts General Hospital includes the employees of the Nursing Departments of the Baker Memorial and Out-Patient Department but does not include the Nursing Department of the Phillips House. This procedure is followed only where the various units of a department are under the supervision of one major department head.

Occasional references are made to the McLean Hospital and the Massachusetts Eye & Ear Infirmary. These two hospitals operate as separate organizations and their structures are not given. The former has its own director, whereas the latter has the same one as the other units of the Massachusetts General Hospital.

In contrast to the McLean Hospital and the Massachusetts Eye & Ear Infirmary, the Out-Patient Department, Baker Memorial and Phillips House operate as individual units but are closely connected under the general supervision of one director. Wherever possible, the charts will show which departments serve all units and those which serve just one or more. An example of this arrangement is given in the organization of the dietary department as compared with the housekeeping departments and record department. The chief dietitian, with her assistants, is in charge of all dietary units, as well as consultant at the Massachusetts Eye & Ear Infirmary. The housekeeping departments of the Out-Patient Department, Phillips House, and General Hospital have a matron in charge of their respective divisions. The record room operates as one central department and serves all units.

The research laboratories of the hospital are so numerous and interwoven that no attempt has been made to chart them diagrammatically. A listing of them is given, as well as their means of support.* There are approximately 34 workers in the medical research laboratories and 24 in the surgical research laboratories; a total of 58 employees.

A note should be made with reference to the Out-Patient Department, Chart XVI. Many of the

*See page 29.

clinics operating on different days have the same nursing personnel. The chart, as it is, shows the delegation of authority of the personnel and traces the lines of communication as it would appear in any clinic.

The use of these charts is not confined to any one problem. It is surprising how often these "personnel pictures" are desirable in committee meetings and such, where any problem connected with the personnel or organizatoin of the hospital is concerned.

The Laboratories of the Massachusetts General Hospital Are Divided into Three Categories*

I Clinical Laboratories—which are supported mostly by Massachusetts General Hospital Funds:

A—Pathological Laboratories including: (see Chart V)
1 Surgical Pathology
2 Autopsy
3 Neuropathology
4 Bacteriology
5 Serology

B—Clinical Laboratories of the Baker Memorial Hospital, Phillips House and Out-Patient Department. (See Chart V)

C—Chemical Laboratory—Diabetic Laboratory

D—Basal Metabolism Laboratory

E—Spinal Fluid Laboratory (Neurosurgical Laboratory)

F—Allergy Laboratory

G—House Officers' Clinical Laboratories

II Research Laboratories—which are supported mostly by outside funds:

A—Medical Research Laboratories:
1 Dr. Jones'
2 Dr. Talbott's
3 Dr. Bauer's
4 Dr. Jacobson's
5 Dr. Hertz's
6 Dr. King's

B—Surgical Research Laboratories

C—Children's Medical Research Laboratories

III

A—Biological Laboratories under Doctor Albright which perform 50 per cent Clinical and 50 per cent Research and are supported jointly by the Massachusetts General Hospital and by outside funds

B—Electrocardiographic (E. K. G.) Laboratory

C—Electroencephalographic Laboratory

*Indicated on Charts as IIIA.

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**See "The Laboratories of the General Hospital Are Divided into Three Categories."

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—S—

Salad Maids (Dietary) ..... XII, XIX
Seamstress ..... X, XXII
Secretaries (all Departments)
Secretaries (Administration) II
Sewing-Room Workers ..... X, XXII
Social Service Dept. VII
Social Service Dept. (BM) XVII
Sorters (Laundry) IX
Special Department XI
Staff (Medical, Surgical, etc.) III
Statistical Clerk XV
Stenographers XV
Storekeeper II
Storeroom (Dietary) XII
Students (Dietary) XII
Students (Nursing) ..... VI, XVI
Students (Occupational Therapy) XI
Students (Social Service) VII
Surgical Service, Chief III

—T—

Technicians (X-ray) IV
Technicians (Laboratory-Path.) V
Technicians (Research) ..... IIIA**
Telephone Operators II
Training School, Nurses VI
Treadwell Library II
Truck-boys (Dietary) ..... XII, XIX
Trustees (Board of) I
Tumbler Operators (Laundry) IX

—U, V—

Vacuum Cleaners ..... X, XX
Volunteer Artist XI
Volunteers—Nursing Dept. VI
Volunteers—Out-Patient Dept. XVI
Volunteers—Occupational Therapy XI
Volunteers—Social Service Dept. VII

—W—

Waitresses XII
Ward Helpers ..... VI, XVIII, XXI
Ward Maids ..... VI, XVIII, XXI
Warren Library II
Washmen (Laundry) IX
Watchmen VIII
Window Washers ..... X, XX

—X, Y, Z—

X-ray Department (GH, OPD) IV
X-ray Department (BM) XVII
X-ray Department (PH) XXI
Yardmen VIII

**See "The Laboratories of General Hospital Are Divided into Three Categories," page 29.

Chart I

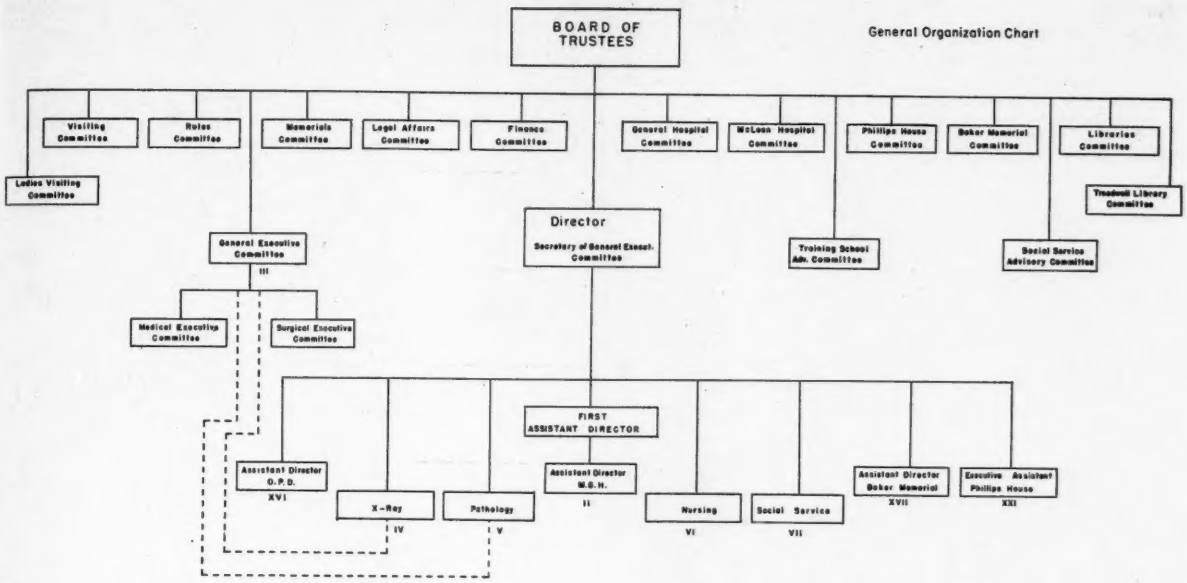


Chart II

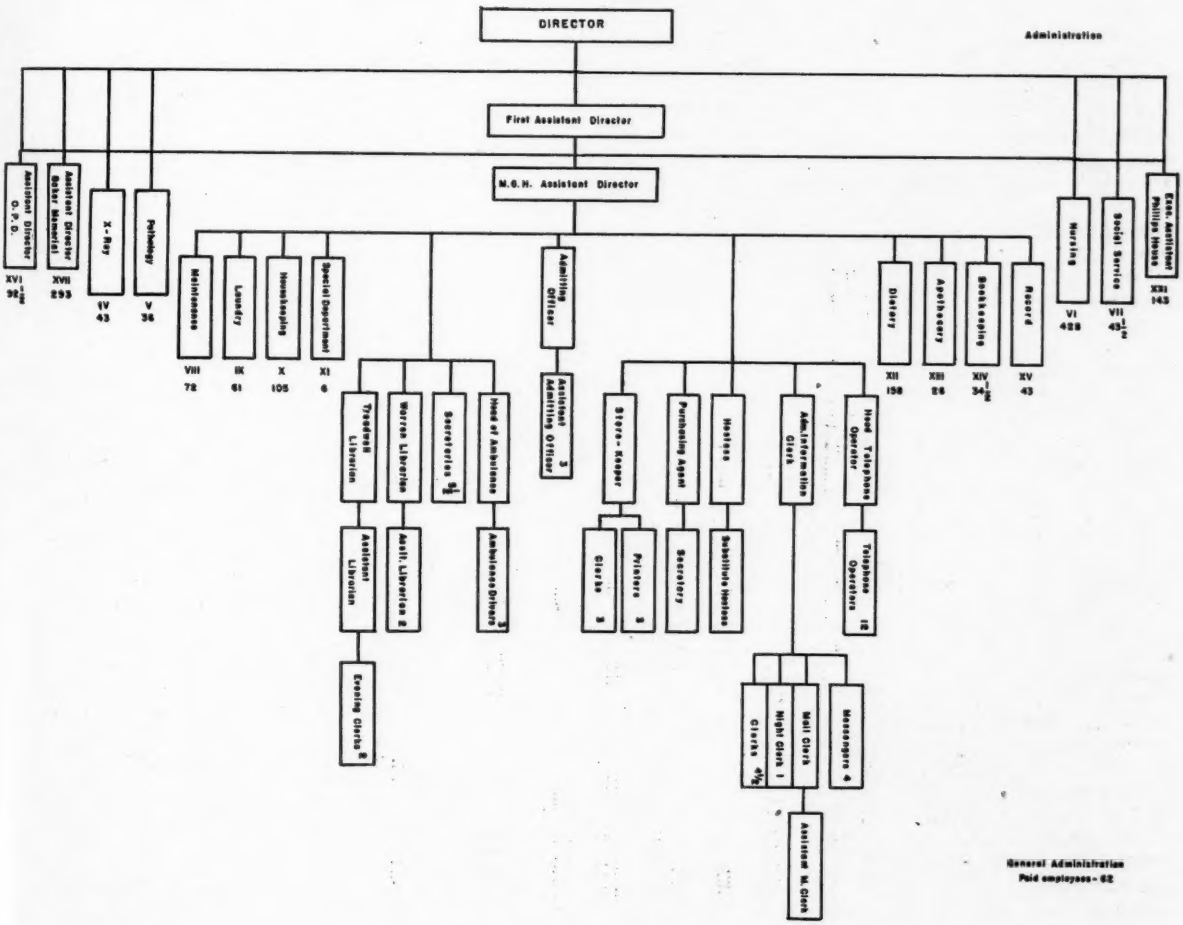


Chart III

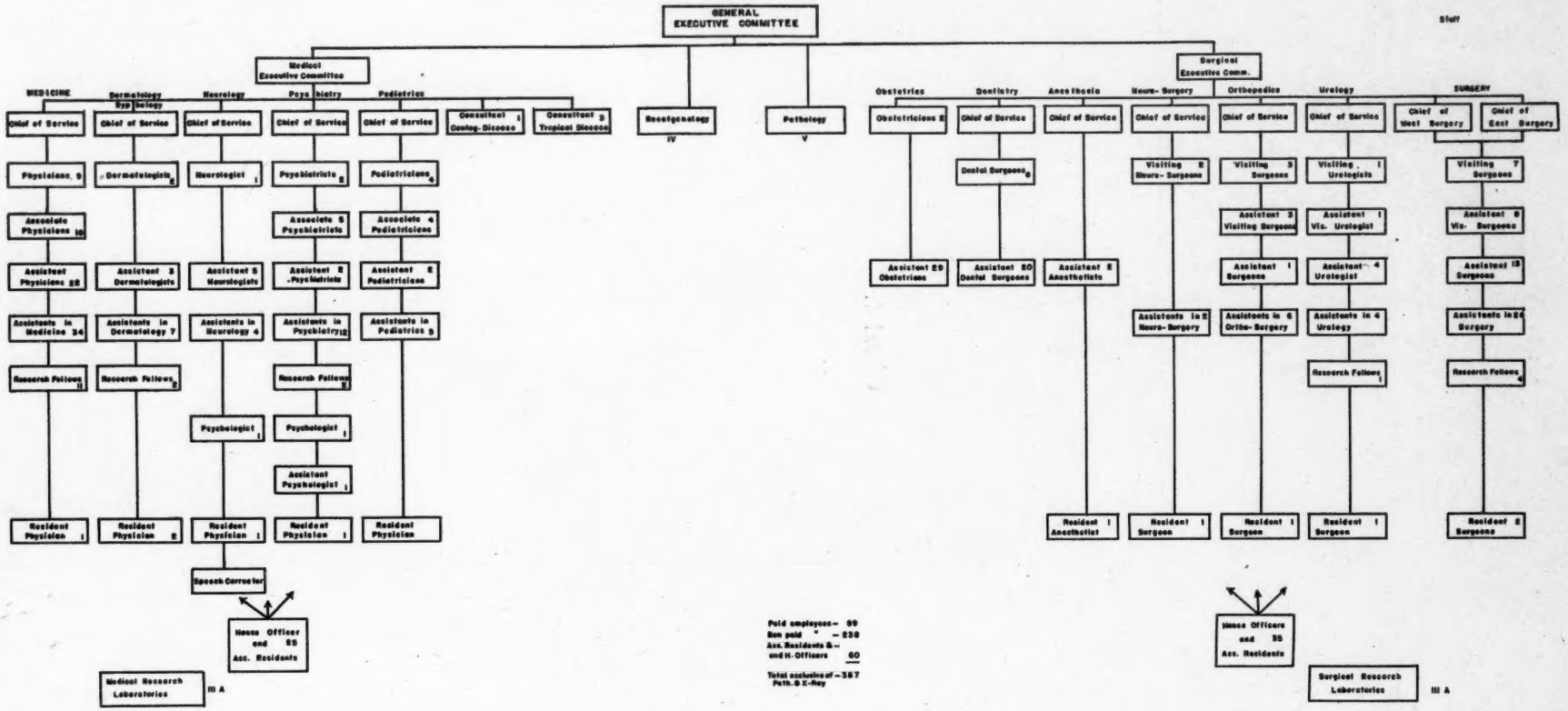

GENERAL EXECUTIVE COMMITTEE
Staff
Medical Executive Committee
Surgical Executive Comm.
MEDICINE
Dermatology Syphilology
Neurology
Psychiatry
Pediatrics
Consultant Contag. Diseases 1
Consultant Tropical Diseases 1
Roentgenology IV
Pathology V
Obstetrics
Dentistry
Anesthesia
Neuro-Surgery
Orthopedics
Urology
SURGERY
Chief of Service
Chief of West Surgery
Chief of East Surgery
Physicians 9
Dermatologists 2
Neurologist 1
Psychiatrists 2
Pediatricians 4
Visiting 2 Neuro-Surgeons
Visiting 3 Surgeons
Visiting 1 Urologists
Visiting 7 Surgeons
Associate Physicians 10
Associate 5 Psychiatrists
Associate 4 Pediatricians
Assistant 3 Visiting Surgeons
Assistant 1 Vis. Urologist
Assistant 8 Vis. Surgeons
Assistant Physicians 22
Assistant 3 Dermatologists
Assistant 5 Neurologists
Assistant 2 Psychiatrists
Assistant 2 Pediatricians
Assistant 29 Obstetrics
Assistant 20 Dental Surgeons
Assistant 8 Anesthetists
Assistant 1 Surgeons
Assistant 4 Urologist
Assistant 13 Surgeons
Assistants in Medicine 34
Assistants in Dermatology 7
Assistants in Neurology 4
Assistants in Psychiatry 12
Assistants in Pediatrics 5
Assistants in 2 Neuro-Surgery
Assistants in 6 Ortho-Surgery
Assistants in 4 Urology
Assistants in 24 Surgery
Research Fellows 11
Research Fellows 2
Research Fellows 2
Research Fellows 1
Research Fellows 4
Psychologist 1
Psychologist 1
Assistant Psychologist 1
Resident Physician 1
Resident Physician 2
Resident Physician 1
Resident Physician 1
Resident Physician
Resident 1 Anesthetist
Resident 1 Surgeon
Resident 1 Surgeon
Resident 1 Surgeon
Resident 2 Surgeons
Speech Corrector
House Officers and 25 Asst. Residents
House Officers and 35 Asst. Residents
Medical Research Laboratories III A
Surgical Research Laboratories III A
Paid employees — 99
Non paid " — 238
Asst. Residents & — and H. Officers 60
Total exclusive of — 387
Path. & X-Ray

Chart IV

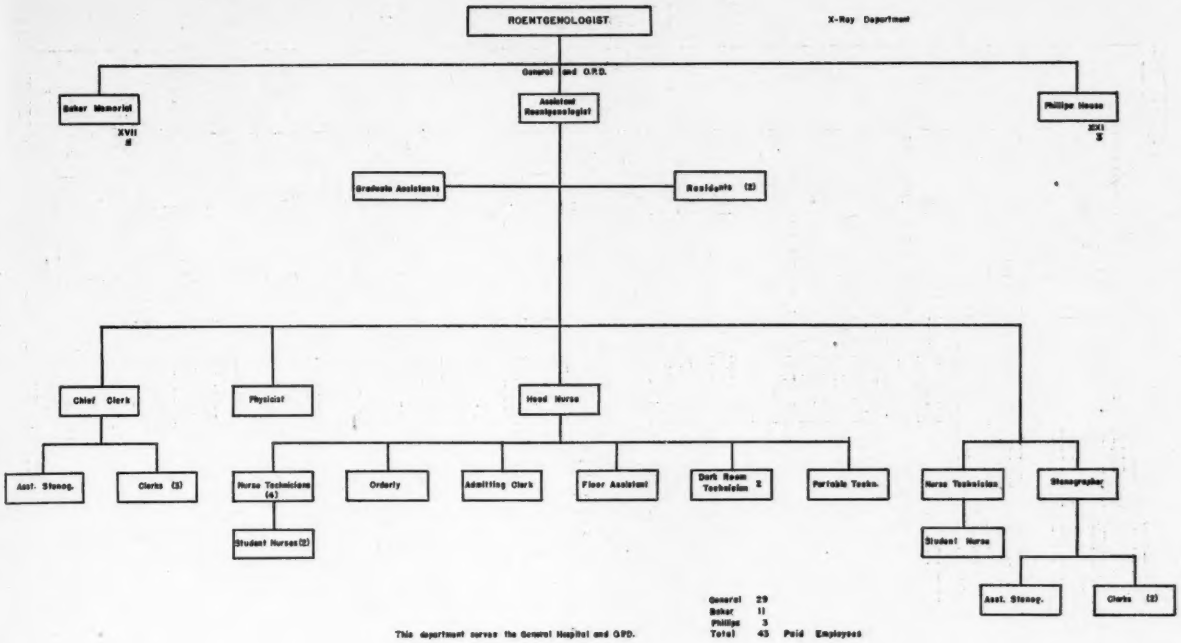


Chart V

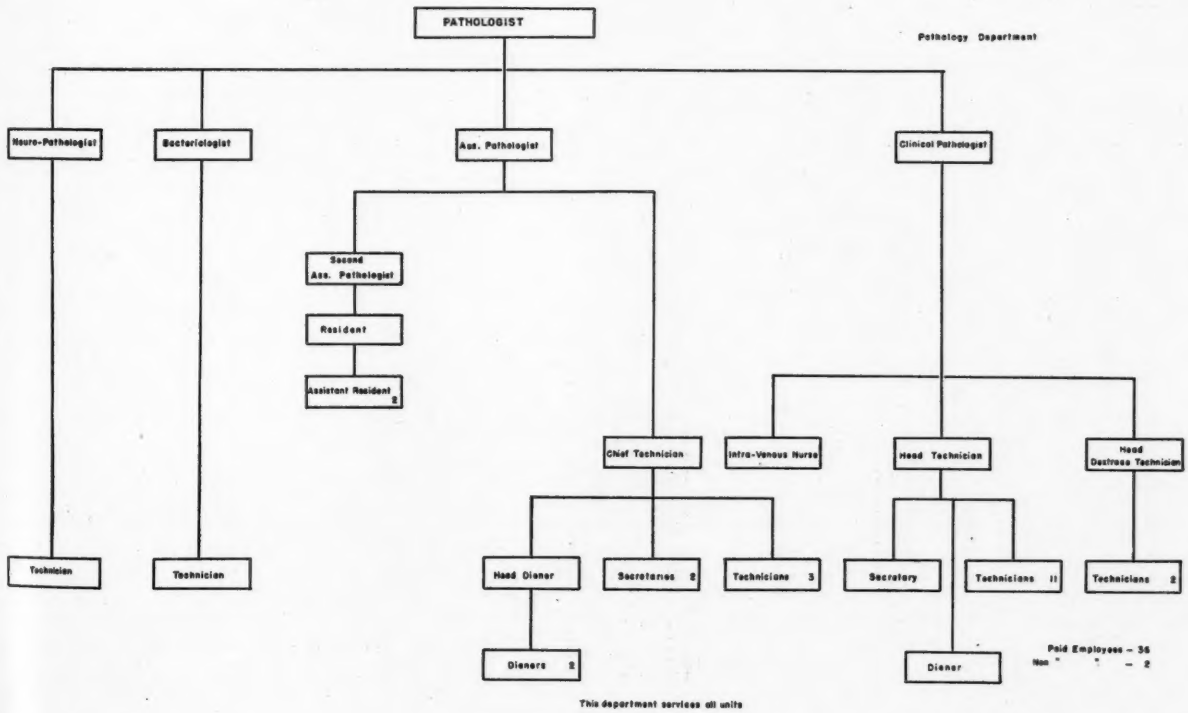


Chart VI

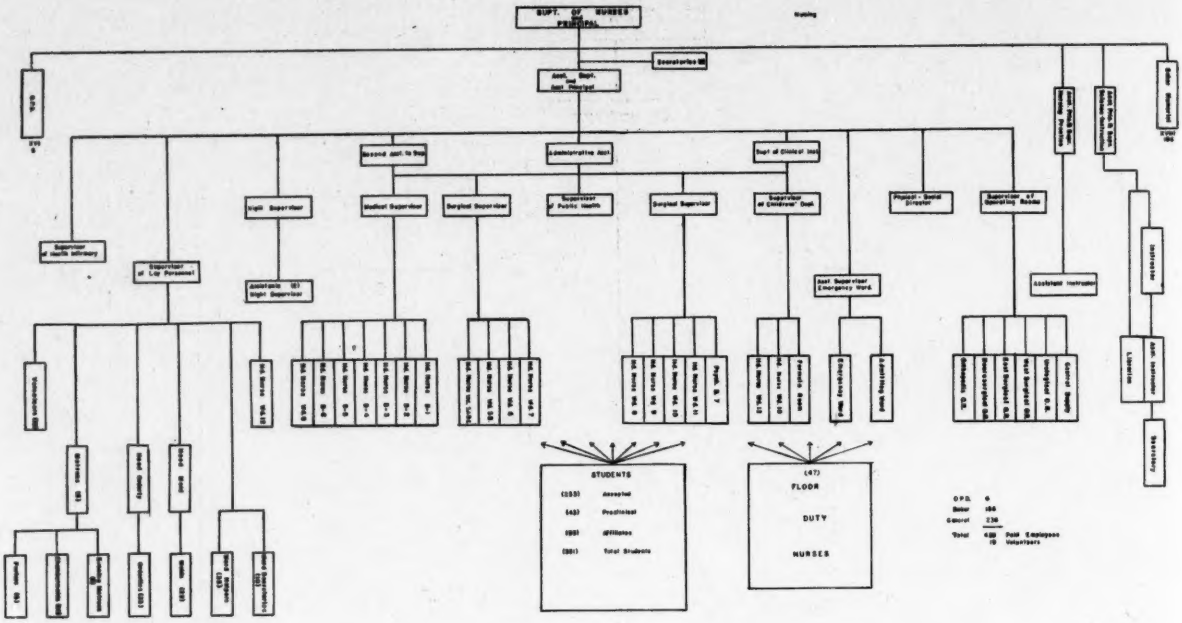


Chart XXI

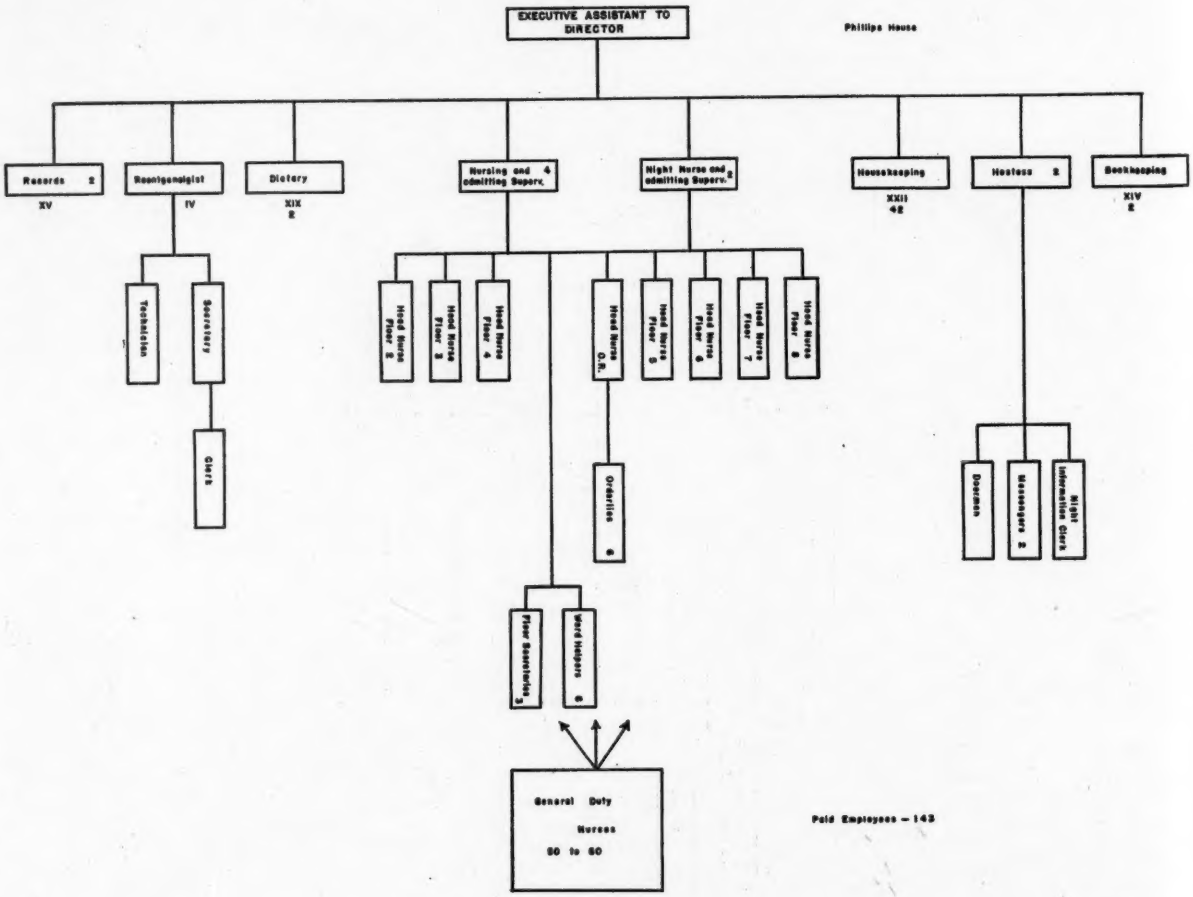
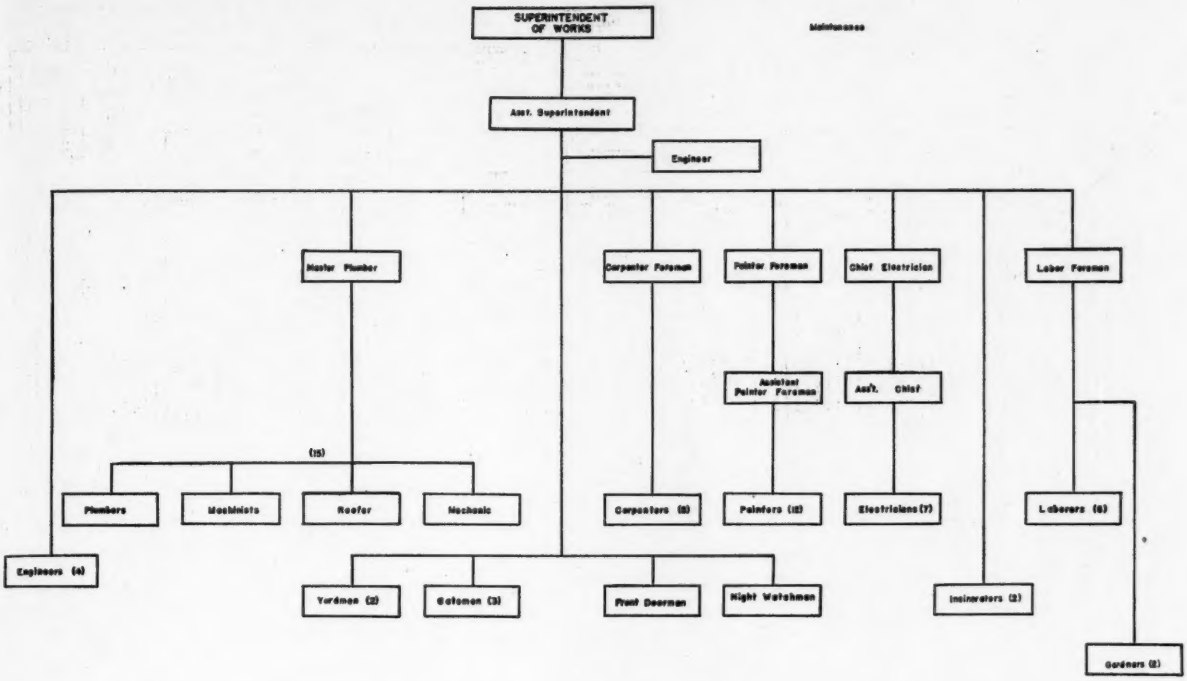


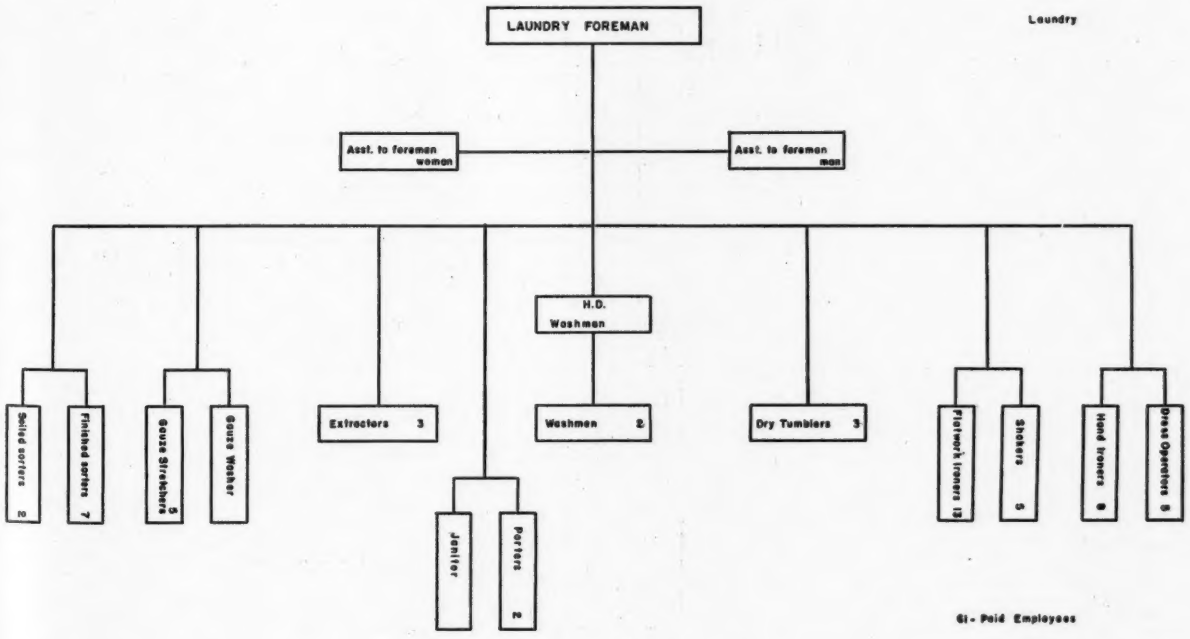
Chart VIII



72 Paid Employees

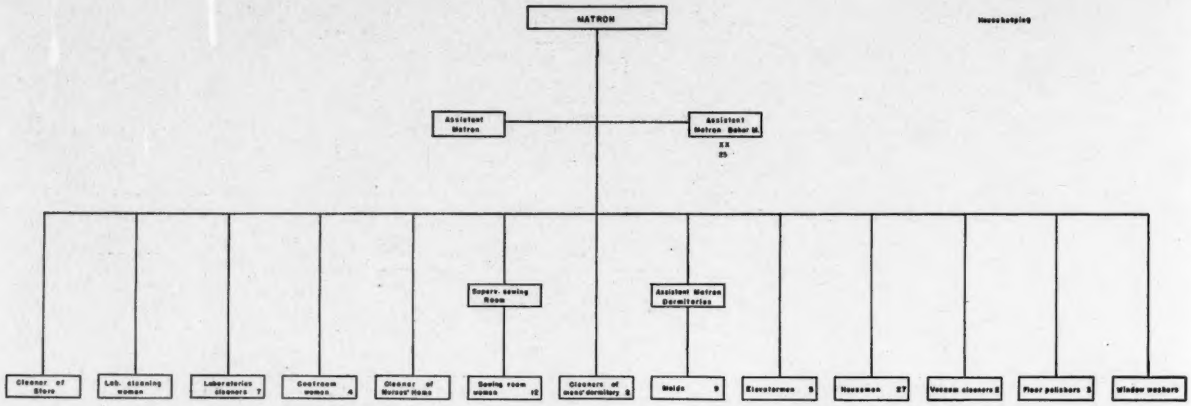
This Department Services All Units

Chart IX



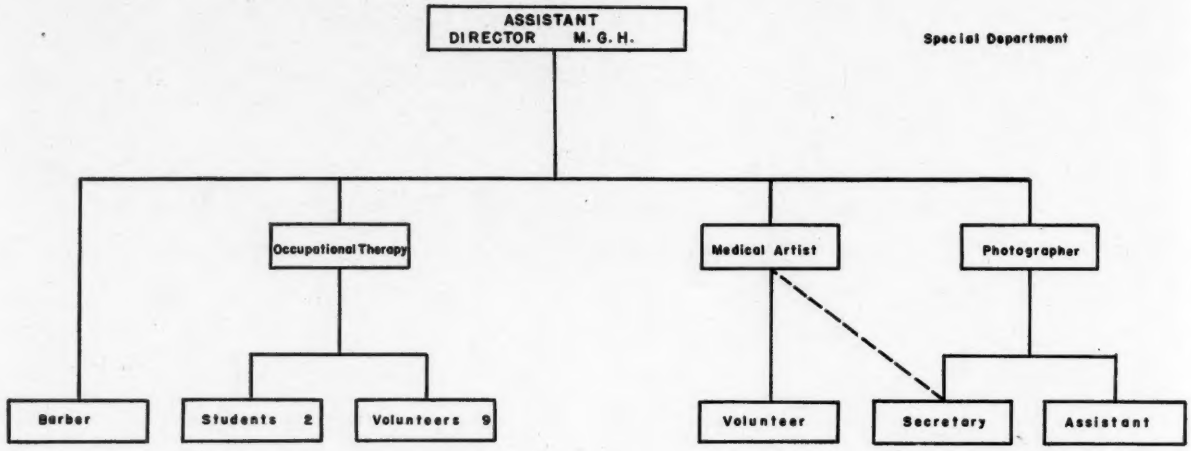
61 - Paid Employees

Chart X



Paid Employees — 105

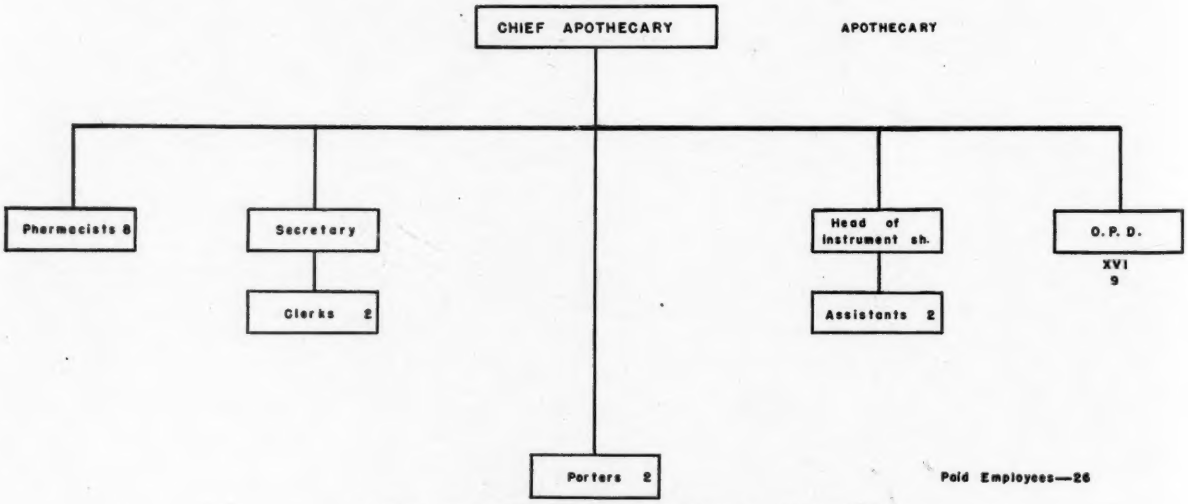
Chart XI



Paid Employees — 5
Non " " 1
Volunteers ——10

This department services all units

Chart XIII



Paid Employees—26

This department services the M.G.H., Baker Memorial, and Phillips House.

Chart XII

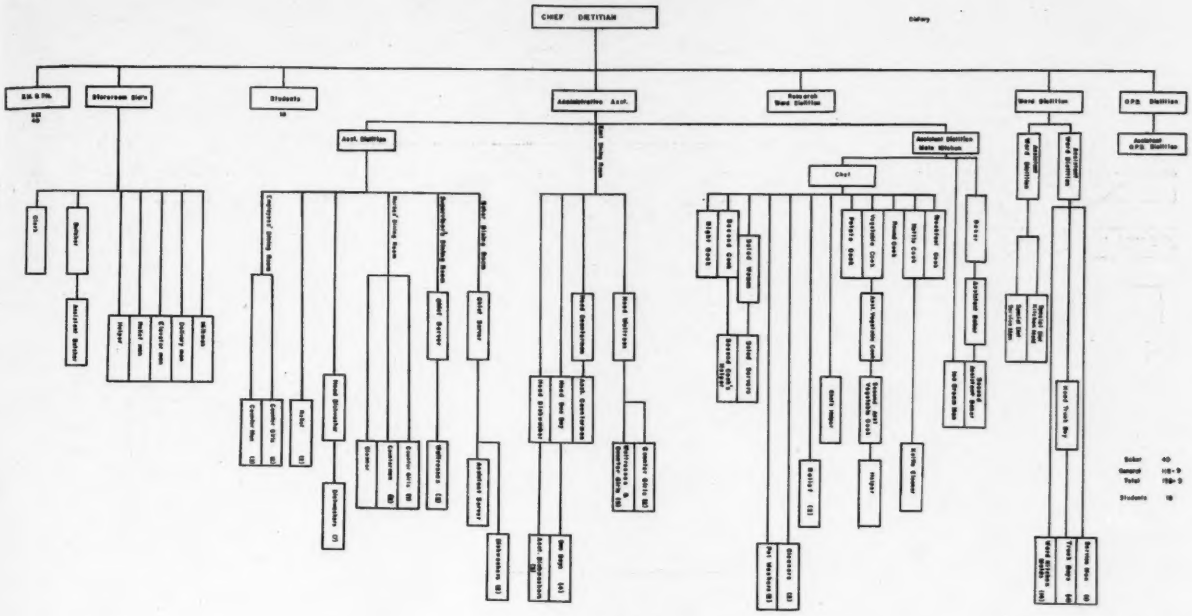


Chart XIV

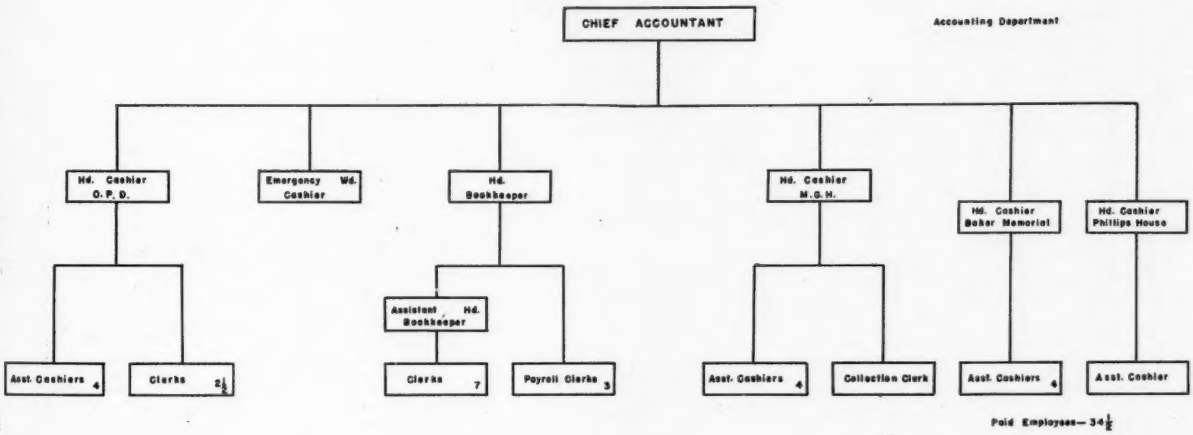


Chart XV

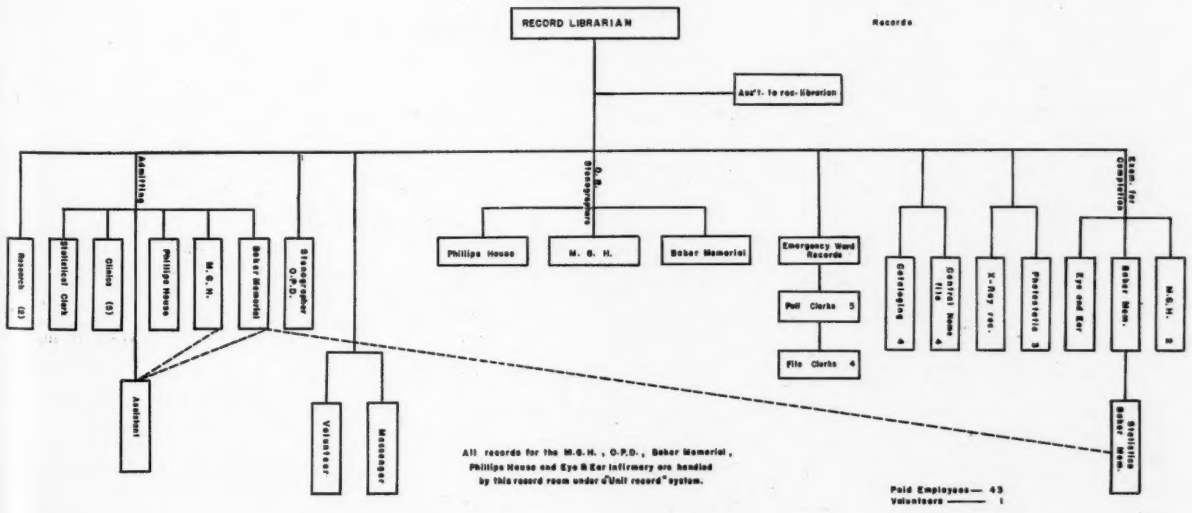


Chart XVI

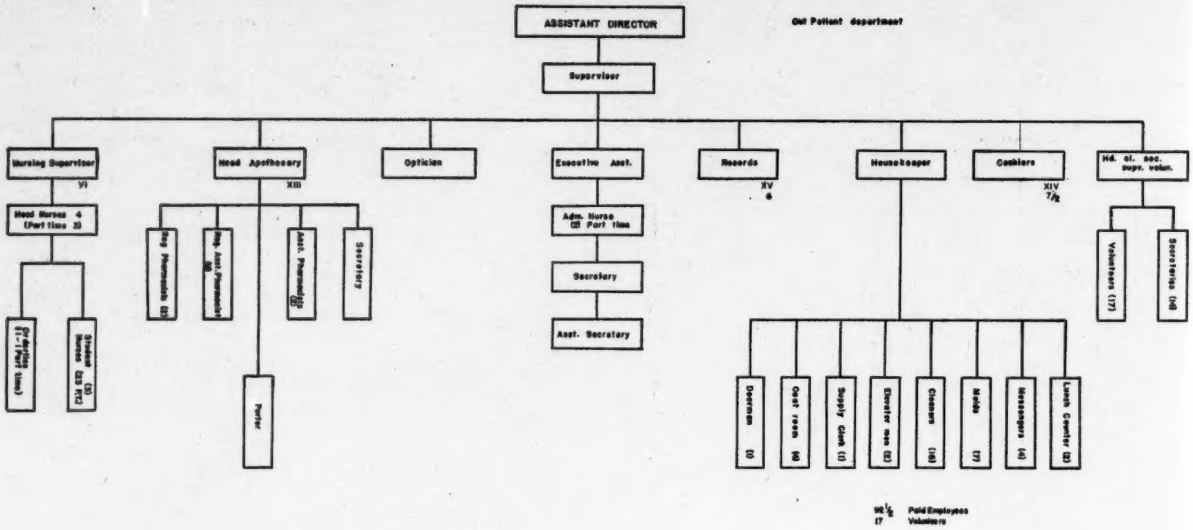


Chart XIX

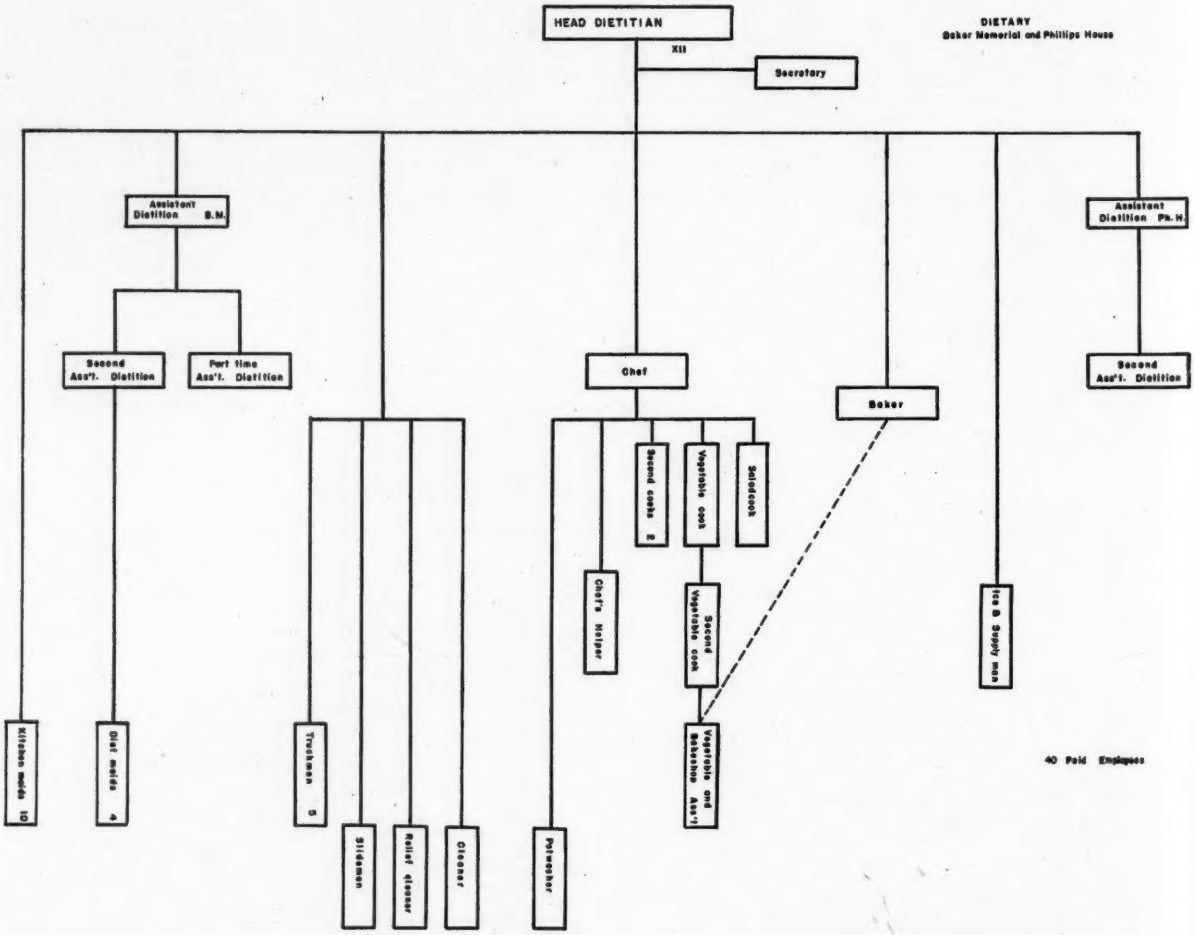


Chart XVIII

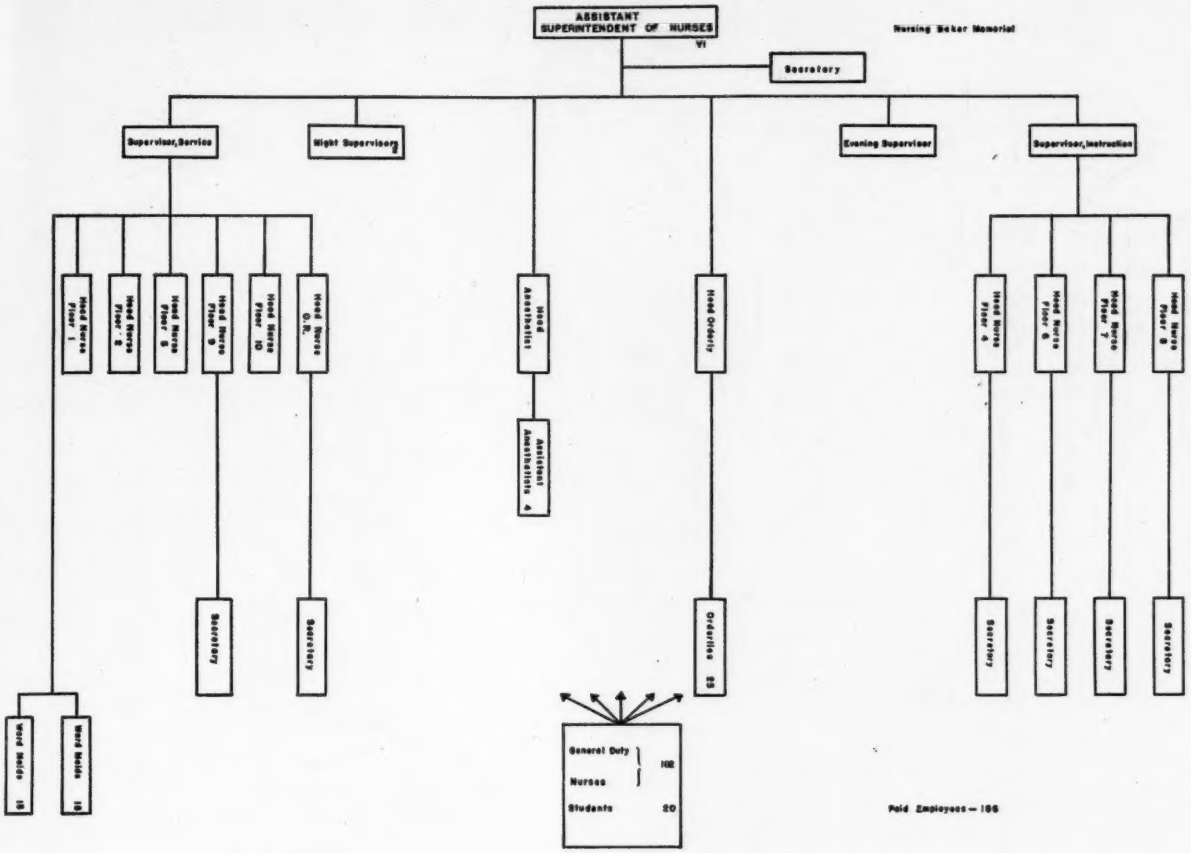


Chart XVII

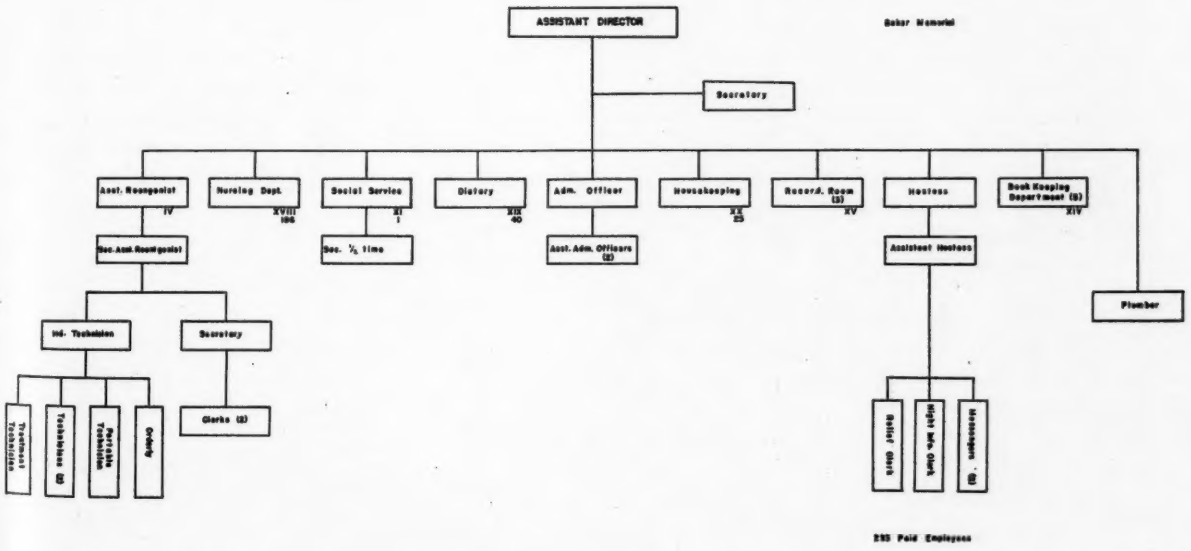


Chart VII

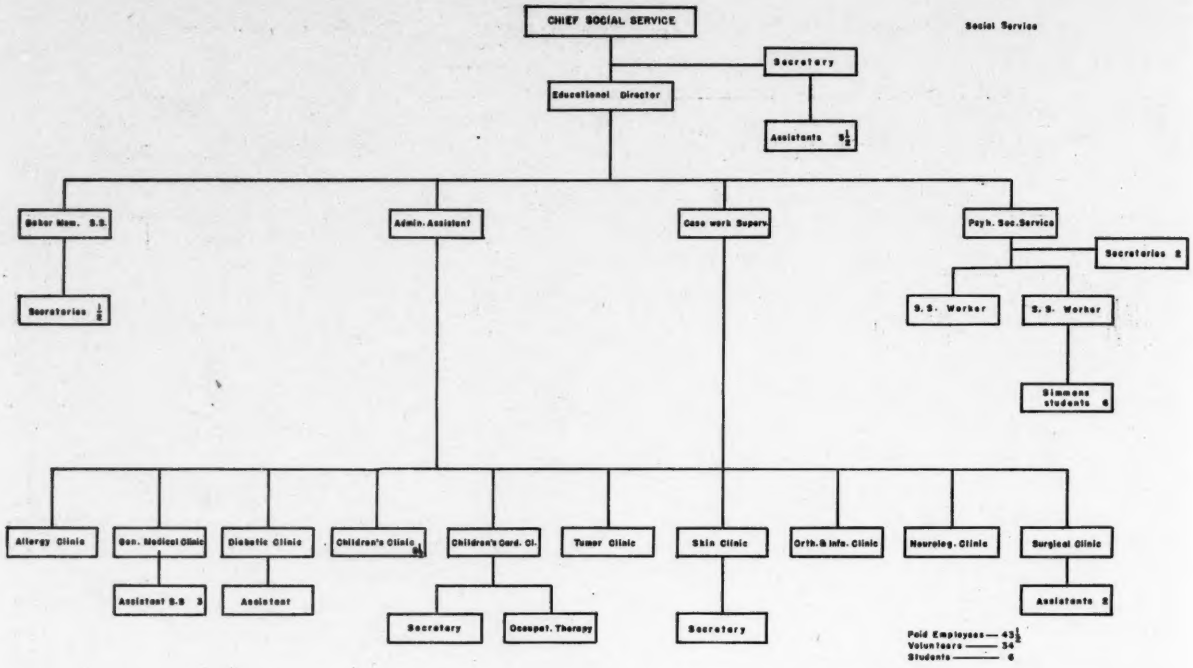


Chart XX

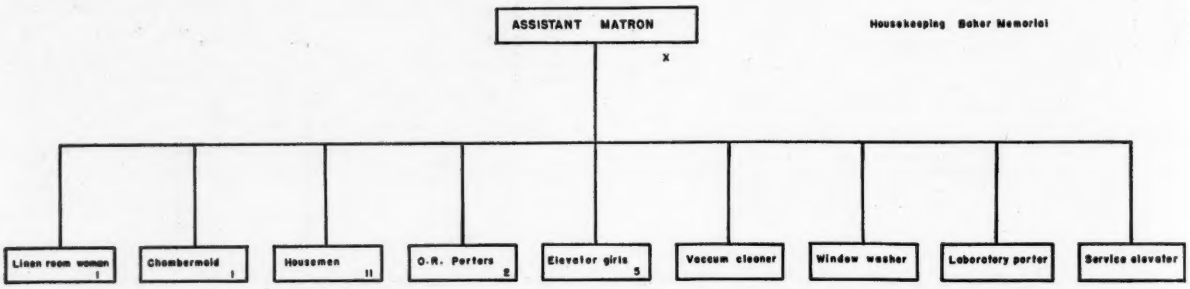
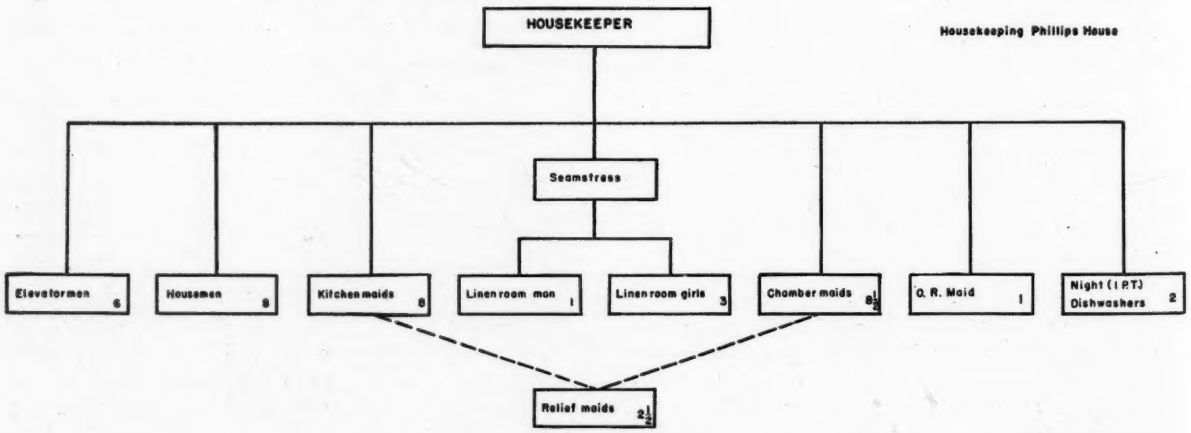


Chart XXII



The Catholic Hospital Association Holds Its Twenty-Sixth Annual Convention

THE Catholic Hospital Association of the United States and Canada held its Twenty-sixth Annual Convention in Philadelphia June 16 to 20, inclusive, under the patronage of His Eminence Dennis Cardinal Dougherty, Archbishop of Philadelphia. The reverend clergy and sisters, representing more than 700 Catholic hospitals of the United States and Canada, contributed to establishing a new high peak in attendance.

The theme of the convention program was "The Catholic Hospital in the Service of the Nation."

The program was carefully arranged by the Executive Committee composed of the Reverend Alphonse M. Schwitalla, S.J., President of the Association, M. Ray Kneifl, its Executive Secretary, and Mother M. Irene, S.S.M., the Right Reverend Monsignor Maurice F. Griffin, and Sister Helen Jarrell, R.N.

Previous to the opening of the convention, the following conferences were held: The Ninth Conference on Nursing Education; the Third Conference on Laboratory Technology; the Second Conference on Medical Social Service; and the Seventh Conference on Hospital Administration.

Monday, June 16

At the opening meeting on Monday afternoon Reverend Alphonse M. Schwitalla, S.J., delivered his presidential address. Greetings from the Archdiocese of Philadelphia were extended by the Right Reverend Monsignor Cornelius P. Brennan and from the National Catholic Welfare Conference by the Right Reverend Monsignor Michael J. Ready; from the Commonwealth of Pennsylvania by the Honorable S. M. R. O'Hara; for the City of Philadelphia, the Honorable Judge Vincent A. Carroll; for the American Hospital Association, Edgar C. Hayhow; and for the American Protestant Hospital Association, Walter N. Righter.

Tuesday, June 17

On Tuesday the sectional meetings on "The Administration of the Internship," "Assembling Data for the Budget," "Employment Policy for Nurses," "Mobilization and Private Hospital," "Medical Records," and "Group Hospitalization Plans" were held.

On Tuesday afternoon there was a general meeting at the convention hall, with the Honorable William F. Montavon, director of the Legal Department of the National Catholic Welfare Conference, as chairman. The highlight of this session was the address by the Honorable James E. Murray, United States Senator from Montana, on "The Service of the Catholic Hospital as a Health Caring Agency."

The annual Exhibitors' Dinner was held on Tuesday evening, with the Right Reverend Monsignor Maurice F. Griffin as toastmaster.

Wednesday, June 18

On Wednesday morning a general meeting was held on the topic "The Purposes and Achievements of the Catholic Hospital as a Social Agency.

Thursday, June 19

On Thursday morning there were round-table discussions and sessions on "The Educational Program of the Internship," "Formulation of the Budget," "Employment Policy for Non-Professional Personnel," "The Nurse in the Preparedness Program," "Dietetics and Dietary Service," and "Hospital Library Service."

Friday, June 20

On Friday there were sectional meetings and round-table discussions on "Residencies and Fellowships as a Preparation for the Specialty Boards," "Procedures for Budgetary Control," "The Hospital's Responsibility for Personnel," "The Hospital's Auxiliary Professional Personnel in the Preparedness Program," "The X-Ray Department," and "Venereal Diseases and Social Hygiene."

Exhibits

The Educational and Technical Exhibit of the Convention was one of the most complete that has been staged at any convention. Of particular value were the educational exhibits which are becoming better and more interesting with each convention. The commercial exhibit included a fine presentation of the latest developments in hospital equipment and supplies.

* * *

The hospital field was interested in a feature of the convention week that was not listed in the official program. It desires to formally and very sincerely extend its congratulations to the Executive Secretary of the Catholic Hospital Association, Michael Raymond Kneifl, and Eleanor Boving Manning, who were married in Philadelphia on June 21. May the blessings of a happy and prosperous wedded life be with them always. This is the earnest wish of the thousands of friends of Mr. and Mrs. Kneifl throughout the hospital field.

Protecting Our Hospitals

BASIL C. MacLEAN, M.D.

ONE hundred years before the establishment of the National Board of Fire Underwriters, the hazard of fire in a hospital was recognized but was considered a problem to be solved by the individual institution. In Dr. Francis Packard's history of the oldest hospital in this country, the Pennsylvania Hospital, it is mentioned that

> "an useful and much appreciated gift to the hospital was a fire engine presented by Elias Bland of London in 1763"

and he also states that the Board of Managers acknowledged in subsequent years the gift at various times of leather fire buckets, axes and other fire fighting appliances many of which were given to the hospital by the insurance companies in those miscalled "good old days" when there was no efficient fire department.

At about the time of the organization of the National Board of Fire Underwriters in 1866, there is mentioned in the history of another old hospital the constant danger from fire. Some of the entries in the Governors' Visiting Book of this hospital state that—

> "We find that some of the patients lately, in violation of the rules, smoked occasionally; we did what we thought necessary to counteract this dangerous propensity, but we make this note more to put the governors that may succeed us on their guard, so that they may also continue their endeavours to put down this evil immediately, as some of the patients to avoid detection, have been known to hide their pipes hastily in their straw beds, to the great danger of the building."

> "The means of preserving a light during the night in the wards is not as certain or as safe as it should be. The present mode of burning a floating light of oil in a tumbler is attended with many inconveniences, the patients get at it during the night, move it about and often put it out, and it is feared attempt to light pipes and segars at it."

The Author

● **Dr. Basil C. MacLean is President-Elect of the American Hospital Association and Medical Director of Strong Memorial Hospital, Rochester, New York.**

The remarkable results achieved in fire prevention and fire protection in hospitals have paralleled their development from the pest houses of seventy-five years ago to the modern scientific institutions of today. The modern hospital reflects the achievements in medical and other scientific research. In 1866 Pasteur was laying the foundations of modern bacteriology on which soon after another pioneer, Lister, based the aseptic technique which finally made surgery safe. The creation of schools of nursing, the use of improved anesthetics and finally the revolutionary improvements in chemotherapy and modern methods of medical diagnosis and treatment have so changed the character of hospital care that a hospital of even twenty-five years ago would be as out-of-date today as a motor car of the same vintage.

Influence of National Board of Fire Underwriters on Fire Protection in Hospitals

Year by year improvements have been effected in the design and construction of fireproof or fire resistant hospitals and in this the National Board of Fire Underwriters has exerted a steady, helpful, and productive influence. There is not time to tell of the many contributions of the National Board, but one must mention the numerous studies which have been made and the periodic bulletins which have been issued to the hospital field. Particular mention should be made of the self-insepection blanks which are furnished by the Board to hospitals and which are now in use all over the United States.

We should not be smug, however, for we still

*Presented at the Seventy-fifth Anniversary dinner of the National Board of Fire Underwriters, May 1941.

have hospitals, nursing homes, and homes for nurses which are fire traps of the first water. The services of this Board have been important in attacking the frontier of fire protection ignorance, but there is still a frontier. Indeed, this organization might accomplish much in a campaign of primary education to hospital administrators and hospital trustees on such a simple but little understood subject as co-insurance.

The American Hospital Association is glad to participate in paying tribute to the efforts and achievements of the National Board of Fire Underwriters on the seventy-fifth anniversary of its founding. And it is the hope of all those who are concerned with the further development of the hospital system in this country that the work of the National Board will be continued. At this time when the dominant note is national defense, the voluntary hospitals of the United States are aware of their responsibility to gear, wherever possible, their facilities to the needs of the armed forces. Equally important, however, is their duty to provide, to the extent of their resources, for the needs of the civilian sick and it is hoped the American public will not forget in peace or war the importance of the hospital as the natural health center of the community and its need of protection from any hazard that would impair its service.

Dr. Robin C. Buerki Goes to the University of Pennsylvania

Dr. Robin C. Buerki, of Madison, Wisconsin, a nationally known authority in the fields of hospital administration and graduate medical education, will become Dean of the Graduate School of Medicine of the University of Pennsylvania on October first, this year, when Dr. George H. Meeker, now dean of that school, will retire on age, it was announced today by President Thomas S. Gates.

Doctor Meeker has been Dean of the Graduate School of Medicine at Pennsylvania since 1919, when that school was opened, and also has served as manager of the Graduate Hospital, professor of chemistry in the School of Medicine, and professor of bio-chemistry in the Graduate School of Medicine.

Long a distinguished figure in the teaching and administrative fields, Doctor Meeker was the recipient of the honorary degree of doctor of science at the University of Pennsylvania's Commencement Exercises last June, and holds the same degree from Villanova College. He also has received the honorary degree of doctor of laws from Ursinus College and Lafayette College. He was graduated from Lafayette College in 1893 with the degree of bachelor of science.

In addition to becoming Dean of the Graduate School of Medicine, Doctor Buerki has been appointed Director of Hospitals of the University of Pennsylvania—a newly created post in which he will have direction over the University Hospital, the Graduate Hospital, and the Orthopaedic Hospital.

Doctor Buerki, who is expected to go to Pennsylvania about September first, is superintendent of all the hospitals under the jurisdiction of the University of Wisconsin, including the Wisconsin General Hospital; executive secretary to the dean of the Medical School of the University of Wisconsin, and professor of hospital administration of that school. He is a graduate of the University of Wisconsin and of the School of Medicine of the University of Pennsylvania. Following his graduation from the Medical School in 1917 he was an intern and chief resident physician at the University Hospital in this city for a time. He also served as a first lieutenant in the Army Medical Corps and later engaged in private practice in Boise, Idaho, and Burns, Oregon, before becoming associated with the University of Wisconsin in 1923.

Doctor Buerki is a charter Fellow and a former president of the American College of Hospital Administrators; he was on the Executive Committee, and is a member of the Committee on Future Program and Policy.

In 1935-36 he was president of the American Hospital Association and he has served at various times as chairman of the Council on Professional practice, as secretary-treasurer of the Advisory Council on Medical Education, as chairman of the Advisory Committee to the United States Children's Bureau, and as a member of the Commission on Hospital Service.

He also has held membership on the executive committee of the Advisory Board for Medical Specialties, and from 1938 to 1940 he was engaged in directing a comprehensive survey of graduate medical education for the Commission on Graduate Medical Education. In 1940 he was president of the Tri-State Hospital Assembly.

Fire Prevention and Fire Protection in Hospitals

J. E. T. McCLELLAN

IT HAS become a habit of the general public to take hospitals for granted. The average person never stops to consider the extent of the service which hospitals render in their respective communities. He does not give a thought to the chaos and tragedy which would follow the elimination of the hospitals from his scheme of living. It is only when he, or a member of his family, needs hospitalization desperately that he appreciates, in some small part, what the institution is doing for him and everyone else in the community.

Hospitals originally were established to heal the sick and wounded. Nowadays healing is only a part of their function. Preventive medicine functions to a great degree through hospitals. Research is carried on in them. The public health is thus protected and promoted far beyond the appreciation of the man in the street.

Fire Protection the Hospitals Responsibility

The primary responsibilities imposed upon and assumed by a hospital are followed, naturally and inevitably, by secondary responsibilities and duties. Among the latter is the protection of lives of patients and employees from the hazards and dangers of fire, which are ever present in any structure used for human habitation. In no place is a sound, constructive fire safety program more important than in a hospital. This is true in normal times of peace; in abnormal times, such as the present, all the usual precautions are as important as ever, and, in addition, the not too remote prospect of attack by incendiary and high explosive bombs upon civilian and base hospitals makes new special precautions necessary. The possibility of epidemics, always a threat in war times, and the care of large numbers of wounded make every hospital resource of even greater importance today than in normal peace times. Hence, the protection of these institutions from dangers of all kinds, without and within, is of paramount importance.

Fire protectionists were originally concerned with the mere extinguishment of fire. Modern methods, however, place strong emphasis on prevention of fire coupled with the necessary facilities and organization for extinguishment. We have, therefore, divided the subject into two main heads, (1) Fire Prevention, and (2) Fire Protection. Each of these, in turn, is again divided into two principal sub-heads, (1) Safety to Life, and (2) Safety to Property.

The Author

● **J. E. T. McClellan is Superintendent of the Schedule Rating Office of New Jersey, Newark, New Jersey.**

The First Steps in Sound Fire Prevention

The first step in a sound fire prevention program is a complete, detailed survey of your assets and liabilities. Your assets are good construction, sound practices, safety precautions of all kinds; your liabilities are poor, combustible construction, inadequate exit facilities, unsound practices, lack of safety, precautions, and, above all, absence of appreciation of the fact that you may be sleeping peacefully amid all the elements of a tragedy.

In the past twelve years the Schedule Rating Office has surveyed every general hospital in New Jersey of 100 beds, or greater capacity, as well as a number of smaller hospitals and numerous state and county institutions. Confidential reports, based on these surveys, have been placed in the hands of the responsible authorities in each case. I am happy to say that in many instances we have received excellent cooperation and repeated invitations to return for conferences regarding projected improvements and changes. This is a service we are glad to render at any time.

Outline for a Survey

The confidential reports to which I have referred follow a carefully devised outline which has sufficient flexibility to fit any institution, large or small. The principal features considered are:

Construction of Each Individual Building

Is it fire-proof? Ordinary brick? Or frame?

Presented before the Convention of the New Jersey State Hospital Association, Atlantic City, May 1941.

If of mixed construction, what is the percentage of floor area of each type?

Consideration of suitability of construction, viewing it principally from the point of view of safety to life

Examination of floor openings, that is, stairways, elevators, dumbwaiters, laundry chute, and their enclosing shafts, if any. These portions of the structure are examined to ascertain if they are enclosed in proper manner or if they are without adequate enclosure to prevent their acting as flues which will promote the spread of fire, smoke, and gases of combustion from floor to floor

Consideration of available exit facilities, internal and external. Feasibility of use of stair and elevators for emergency exit. Location of horizontal exit partitions forming safe refuge areas. Fire escapes

Occupancy Hazards

Housekeeping

Maintenance shops in buildings housing patients or used as employees' living quarters

Service departments, such as laundries, in buildings housing patients or employees

Operating room hazards

Storage of materials, including flammable liquids and gases

Hazards in connection with light, heating, power, refrigeration, and air conditioning

Protection Features

Public fire protection
First aid fire appliances
Standpipe and hose
Automatic sprinklers
Automatic and manual fire alarm
Watchman and clock

Administration of Fire Prevention and Protection Program

Fire drills of safety corps, duties of which are removal of patients and other helpless persons to a place of safety at the time of fire

Drills of fire brigade, duties of which are the extinguishment of fire, closure of fire doors, stair and elevator shaft doors, etc.

Systematic self-inspection service, followed by correction of defects, including keeping of records under executive control

An adequate fire prevention and protection program can be developed by means of surveys of this kind by a competent fire protection engineer. The success of such a program is entirely dependent upon supervision from the top down through the ranks of the hospital personnel. It is not enough to install mechanical devices, such as fire extinguishers or automatic sprinklers or door closers. All such mechanical devices must be regularly serviced and checked, personnel must be disciplined and drilled in their use, and all of this must be done under the supervision of a responsible executive of the institution.

Officers of South Carolina Hospital Association

At the annual meeting of the South Carolina Hospital Association, held in Columbia on May 16, the following officers were elected for the coming year:

President (re-elected)—Mrs. Byrd B. Holmes, Greenville

First Vice-President—J. B. Norman, Spartanburg

Second Vice-President—R. L. Dougherty, Columbia

Secretary-Treasurer (re-elected)—Charles H. Dabbs, Sumter

New York Institute for Hospital Administrators

The Second New York Institute for Hospital Administrators will be held from October twentieth to the thirty-first under the sponsorship of the American College of Hospital Administrators.

Greater New York Hospital Association Elects Officers

The Greater New York Hospital Association has elected the following officers for the year 1941-1942:

President—James U. Norris
First Vice-President—Bernard McDermott
Second Vice-President—John H. Hayes
Treasurer—George F. Holmes
Secretary—William B. Seltzer

Henrotin Hospital Establishes New Pathological Laboratory

A new pathological laboratory for the ear, nose, and throat clinic has been established at Henrotin Hospital, Chicago. The clinic is a limited and selective clinic for the study of pathology in this field, headed by Dr. Frank J. Novak, Jr. A full-time technician has been employed for the laboratory, working under the direction of Dr. Samuel a Levinson, the hospital's pathologist.

Contribution of Hospital Auxiliaries to National Defense

WALTER H. BROWN, M.D.

THE majority of us do not like to have our regular routine disturbed, we would like to have things run smoothly all the time, but we realize that extraordinary emergencies do arise which have to be met intelligently and courageously. At present we are faced with our great national emergency—preparation for national defense—and we must think clearly and act vigorously. We must be stirred out of our lethargy and forced to realize that the price of survival is the utmost vigilance. The emergency is not of our choosing but we must face the fact that, if freedom of the individual is to survive, we must assist in supporting our allied forces in Europe. God grant it may be accomplished without our entering into armed conflict.

Our first step is shifting the focus of our lives from peacetime to wartime objectives. We should realize that an effective national defense demands that consideration be given to the responsibilities and the needs of each important group of our population and the place of each group in the great national pattern. We know that the civil and industrial needs are as vital to defense as the military ones. We must take inventory of the quantity and the quality of our resource that we may know where and how they can be used to the best advantage.

Additional Personnel Must Be Trained for All Types of Hospital Service

It is universally recognized that our present program for the hospitals must be maintained and to this must be added our defense preparations. The work of the hospital personnel must be reorganized to meet new conditions and strong appeal must be made to the hospital auxilliary and volunteer workers to continue the good work they have been doing and extend it to include direct services that are included in our preparedness program.

Presented at the Convention of the Association of Western Hospitals, San Francisco, California, March 1941.

The Author

● Dr. Walter H. Brown is Professor of Hygiene, Stanford University, Palo Alto, California.

It is essential that we must select equipment and train adequate personnel for all forms of hospital service. The result of withdrawing large numbers of young men and women from their usual occupations and placing them in camps must increase the need for hospitals at these points and unless foresight is used there will be a shortage of hospital personnel, particularly in the medical, laboratory, and nursing fields. As our defense preparation grows, there will be a great demand for physicians, nurses, and public health workers. The result may cause a serious dislocation of medical and hospital services.

At present we have an acute situation facing us in the nursing field. The Army wants immediately, approximately 4000 nurses. Attempt has been made to get the Red Cross Reserve nurses to volunteer. This has not met with marked success. Eventualy, we will have to have those nurses even if they have to be drafted. I am not saying this in criticism, but the facts are presented to awaken us to the realization that, without using a selective personnel service, these problems cannot be solved.

Selective personnel service needs a great deal more thoughtful consideration than we have given it in the past. It means more careful evaluation not only of the work to be done but also of the training or qualifications necessary for a person to do the work. The implication of all this for the auxiliary and volunteer workers is that they must be prepared to play a much more important part in supplementing the work of the hospital and professional personnel at every possible point. This will require more than a mere superficial interest in the hospital. It will mean training and will-

ingness to assume real responsibilities, to sacrifice personal comfort in order to make an essential contribution to national unity. The scope and character of auxiliary or volunteer activity should be defined and each unit should be held responsible for the performance of whatever duties are assigned to it.

Importance of Volunteer Workers in a Hospital

I would like to say a word about the attitude of the administrator toward the volunteer worker. It is essential at the present time that the volunteer worker sees the work assigned to her, not as something tacked on but as an important part in the hospital service. The auxiliary group should be made to feel that they are a part of the hospital, working toward its objectives and helping to solve its problems. Unless they do have that feeling they will not give the kind of service that is potentially possible.

I have been an administrator of health departments. When we had persons who wanted to do volunteer work we try to use them in special work, but when we asked the administrators why they did not want to give them more responsibility, their reply was that volunteers could not be relied upon. This may be true in individual cases but I do not think it applies to organized volunteers.

Whenever we have anything that dislocates any of our usual activities, the widening rings of its influence must be considered. The enormous increase in defense industries presents many new public health problems that are reflected in the hospital. No one can possibly envision what is happening in California and other states where new camps have been located. The population of a city or town near a camp increases immensely and creates housing problems and overloading of hospitals. It also presents a problem for the schools in these areas and a whole train of social problems. In the field of social hygiene, for example—I have had the privilege of talking with Doctor Snow, with whom I worked in the First World War, and he told me that the only difference this time in the problem of social and venereal diseases around camps was that the underworld was so much better organized, and that they were just about twenty jumps ahead of us. We are dealing with the care of the sick and the protection of the health of the population and we must give these problems the most serious consideration.

Careful Organization Needed to Avoid Misdirected Efforts

The hospital auxiliary has an important place in the program for national preparedness. The many activities the auxiliaries have conducted in the hospital should be expanded and new activities added as the need demands. The first concern of each auxiliary should be the enlisting of new volunteers and instilling in the minds of old members the importance of continuing their hospital work. Training classes should be well-organized —there should be no lost motion. Volunteer workers should have the assurance that they have been instructed in the work they are expected to do, whether it be fund-raising, assisting in the outpatient clinic, or helping in the social service department.

Our way of life takes on a newer and deeper meaning in these troubled times. If its survival depends on our defense preparation each one of us will feel well repaid for any sacrifices he makes to preserve our heritage.

Checking Heating Costs

In a comparison of the cost of heating different commercial buildings in Chicago, it was found that buildings that did not check their actual heating costs against the theoretical requirement based on outside temperature—the degree day method—used 0.761 lbs. of steam per thousand cubic feet per degree day. Those that check on a monthly basis used 0.717 lbs. and those that checked daily used but 0.592. Thus the monthly check reduced heating costs by 5.8 per cent, and the daily check reduced heating costs by 22.2 per cent. This saving is more than the difference in heating costs between New York and Washington, or between Buffalo and Pittsburgh, or between New Haven and Philadelphia.

The cost of installing equipment for making such daily check may vary from $25.00 for a simple but fairly accurate type to $200.00 or more for a more elaborate and more accurate type. The saving in the average hospital would amount to about three-quarters of a cent per patient per day, or in a two-hundred-bed hospital about $450 per year. The labor involved is about five minutes per day for the engineer to make and report the readings and about the same time for the clerk who makes the record.

Hospital Administration

MARY E. GAHAGAN, R.N.

THE science and art of hospital administration are growing more complex each year due to the rapidly extending field of hospital service. With the increasing recognition of the value of health protection, hospitals must not only be interested in the cure of the sick but also in the prevention of diseases. In order to perform these functions they must be organized in a scientific manner.

Hospital departments may be grouped into two main divisions: the professional care of the patient and the business management. The business management, professional care, mechanical operation and personal interest should all be coordinated and well directed. These requisites demand that every person engaged in hospital work of any type be thoroughly trained to contribute to the advancement of the hospital.

Basic Functions of the Hospital Administrator

Administration in hospitals is a broad field and the duties of an administrator are many and varied; but certain basic functions are common to all hospital administrators regardless of the size of the institution. They are responsible for:

Seeing that adequate care is given to all patients

Maintaining hospital standards

Coordination of all departments within the hospital

Employment and discharge of all personnel under their supervision

Providing facilities for the care of the health of personnel

Preparing periodic reports

Planning the educational program carried on in the hospital.

In our Indian Service hospitals, hospital administration is a field which offers many opportunities for the performance of skilled technical tasks which only a few years ago were unheard of in the standards of nursing education. To the well-prepared nurse—one who can blend a knowledge of housekeeping, engineering, economics, anesthesia, dietetics, nursing service, pharmacy and laboratory techniques into that special skill called "Hospital Administration"—it offers a challenge.

The Author

● Mary E. Gahagan is Senior Chief Nurse in Charge of Indian Service Hospitals, Department of Interior, Washington, D. C.

The Chief Nurse in Indian Service Hospitals

The position of chief or head nurse has been called the key point around which the administrative mechanism of a hospital is built. What advice should a nurse be given who wishes to enter this field? What preparation should she have and what type of experience is most useful to her? As there seems to be a relationship between adequacy of preparation and satisfaction in one's profession, the type of experience recommended and felt to be most helpful is some sort of supervisory work or internship in an institution, or school, carefully selected with this primary thought in mind.

It is a cardinal principal of good hospital administration that the one in authority should know what is to be done and should not be afraid to say "yes" or "no" in a pleasant but convincing manner. It takes more than a good nurse to be a good administrator. Experience alone is not sufficient. Good hospital administration demands adaptability, sound judgment, initiative, calmness in emergencies, firmness, impersonal dealing with staff and subordinates and fairness and justice to all. These are the qualities that must be sought and which are inherent rather than acquired. No amount of experience as measured in years of service will compensate for their absence.

Measuring the Ability of the Chief or Head Nurse

The effectiveness of a chief or head nurse can be measured largely by her ability to delegate duties to subordinates. It is she who is responsible for that class of employees variously desig-

nated as ward helpers, attendants, orderlies, and understaff with as many varied duties and responsibilities as there are people to define them. She is responsible for the work of this entire group, for the duties they perform, for methods of performance, for accuracy, volume of work, speed, neatness and finish, and for the integration of their individual efforts into perfectly blended service. She is responsible for their instruction and guidance in the ethical principles that must govern their conduct. The chief nurse should be qualified to teach them the principles of hygiene and health. Each member of her staff must be fully informed. It is her duty to hold demonstrations of the methods to be employed in the performance of their routine tasks. Too frequently duties are delegated to subordinates without proper instruction. No individual worker should be assigned to any duty he is incapable of performing. In turn each worker should be asked to demonstrate his skill in performing his duties after proper instruction has been given.

It is a rare individual who can spend any time in a hospital as a patient and not learn something he did not know before. It must be remembered that the patient is the sole reason for the existence of the hospital. It is the chief nurse who determines the quality of care rendered to the patient as well as the patient's impression of the hospital. She is responsible for making his stay in the hospital as pleasant as possible. She has no greater opportunity for health teaching. Thus it is easy to understand why she must not only be the administrator and nurse, but the teacher as well.

Flexible and Adaptable Policies Essential in Good Hospital Administration

No iron clad rules can be set up for the functioning of any hospital. Duties cannot be rigidly standardized because of emergencies which unfortunately will arise. It must always be remembered that each patient is an individual whose personality and emotional attitudes must be understood as well as his physical ailments. However, policies and standards should be set up that are flexible and adaptable to the varying problems of hospital administration.

In directing the duties of an all graduate staff the chief nurse should know more than her staff if she is to guide it wisely. It is her task to integrate the skills, techniques, and knowledge of those who work with her into a smooth functioning organization coupled with a wholesome relationship of the personnel.

Technical Procedures

There are many accepted variations in the correct manner of carrying out technical procedures. Therefore to avoid confusion among the staff it is best to prepare a manual of standard techniques, which are to be followed in all cases, unless specifically ordered otherwise by the physician. Such a manual should be prepared with full participation of the nursing staff, in cooperation with the medical staff and submitted to them for approval before adoption. The time and confusion avoided by using such a manual more than compensates for the trouble taken to standardize the techniques.

The relation of the medical staff to the nursing staff is significant for mutual cooperation and efficiency. The modern nurse is no longer the sick bed attendant only able to perform a few practical duties. She is now a trained observer of symptoms of disease, of the development of complications, and of the effect of drugs and their poisonous manifestations. Since the nurse is in continuous contact with the patient her observations and impressions can be of immeasurable value to the physician and consequently the patient. Almost all physicians appreciate this fact and are grateful to the nurse for any accurate observations or impressions she may record. The wise nurse will of course use tact, ingenuity, and consideration in offering her suggestions and observations without overstepping the bounds of professional etiquette.

Doctors' orders, likewise, are often a source of contention, misunderstanding, and dispute between the nursing and medical staff. Such orders are of the highest medical legal significance for the protection of the nurse and the physician, as well as the welfare of the patient. If the physician is permitted to leave any clinical or treatment procedure to the discretion of the nursing staff, the time will inevitably come when some overanxious nurse will institute some procedure disapproved by the physician. Regardless of the actual effect on the patient of such procedure, a source of discord and misunderstanding will arise which will be difficult, if not impossible, to correct. The only satisfactory method of carrying out doctors' orders precisely and intelligently is to have all orders written by the physician. He thereby rightfully assumes full responsibility for the content of the order.

Helpful Comments and Suggestions

Clarity of plan and loyalty of personnel are the cornerstones on which any organization must stand or fall. Hospitals are no exception. The following comments and suggestions may be helpful to the administrator in improving the quality of service the hospital is rendering:

Does the administrative officer uphold the rules that employees are expected to obey?

Is there any procedure book which standardizes routine but which may be altered according to individual needs of the patient?

Does a nurse accompany each new patient to the bedside and is the patient always greeted kindly?

Does the doctor visit each new patient promptly?

Are accurate histories taken? Are complete physical examinations performed?

Are clinical records complete? Is daily charting concise and adequate?

Are admission orders carried out promptly?

Are doctors' orders carried out promptly and accurately?

Does the doctor accompanied by the charge nurse make daily rounds?

Are call bells answered promptly?

Are frequent rounds made to determine patients' needs?

Is medication carefully dispensed at scheduled hours?

Is the patient observed while taking medication?

Is aseptic technique constantly observed in the operating room, delivery room, nursery, and in carrying out all surgical procedures?

Are tub baths, bed baths, and showers organized and scheduled? Is the patients' bed linen changed as often as necessary?

Are post-operative patients constantly attended until conscious?

Is the condition of all patients known, and is the physician kept informed about the condition of patients?

In cases of serious illness is a system maintained wherein the family is promptly notified?

Are safety bed sides provided for restless and disoriented patients?

Are nurses vigilant in the prevention of accidents?

Are patients properly segregated?

Are patients attended to in all needs they cannot safely perform alone?

Do nurses assist and supervise the serving of trays? Is the diet well-balanced? Is the food appetizing? Is food served so that the patient can eat it without too great an effort, and is assistance given to patients in need of help?

Are patients' belongings properly safeguarded?

Is urinal and bed pan service discouraged during meal hours unless absolutely essential?

Is smoking limited to ambulatory patients and limited to porches and smoking rooms?

Is perfect cleanliness maintained?

Are beds, tables and chairs spaced properly and arranged neatly?

Are wards and rooms properly ventilated to prevent drafts?

Is cleaning performed with a minimum of noise and confusion? Are housekeeping duties suspended in wards during meal time?

Is ward equipment checked frequently for repair and replacement?

Is there provision for the control of loud talking, boisterous conduct, quarreling, coarse language, and bad behavior generally?

Is the staff tactful, pleasant, patient and courteous at all times?

Qualities an Administrator Should Possess

I present an abbreviated list of the qualities which an administrator should possess. This was recently prepared by a group of administrators and I hope it may be helpful.

The modern hospital administrator should show:

Ability to inspire, stimulate and build the morale of the staff; capacity for group leadership; special knowledge of at least one phase of the work; ability to take decisive action—to get things done; practicability; stability and constancy; firmness and determination; objectivity, fairness and lack of prejudices; self-confidence with an honest appraisal of personal limitations; ability to accept criticism constructively; ability to delegate work; initiative and originality; capacity and enthusiasm for the work; a pleasing manner; ability of expression; facility in meeting people; a liking for people; ability to give credit and recognition where deserved; ability to write clearly and fluently; emotional stability and self-control; ability to interpret the work to the public; and finally good manners at all times.

Considering these standards and qualifications may we not ask ourselves how many of us are modern administrators in the best sense of the word?

Price Trend of Hospital Commodities

McGill Commodity Service, Inc., Aburndale, Massachusetts

Sponsored by the Committee on Purchasing of the Council on Administrative Practice

A PROBLEM which is daily becoming more prominent and complicated is the rapid rise in commodity prices, particularly since the first of the year. The table, showing the McGill Index of All Commodities, portrays the story much more strikingly than words. A brief check-up reveals that since the start of the war war the McGill Index of All Commodities has advanced 29 per cent but the bulk of this increase has taken place since the turn of the year, as the upswing in five months' time measures fully 11 per cent. The table also illustrates what has happened in the price structure of fourteen individual classifications.

The sharp and almost uninterrupted price advance since the first of the year has again aroused fear of inflation. The Price Stabilization Board of the OPM has taken action and established a price ceiling on a few commodities, but has generally relied upon the policy of policing in the endeavor to hold the price structure within bounds. Everyone knows that inflation is the road to ruin. It should be avoided but there is no assurance that it will be. When prices rise rapidly, the cost of living automatically responds which, in turn, is a signal for labor to demand higher wages.

Another point that should be understood is that while the Administration is conscientiously working to hold prices down, yet through the medium of farm legislation they have deliberately asked for higher prices. The point is that the attempt to push prices of agricultural products upward has released a rocket, the upward course of which cannot be readily changed. Parity prices are a dangerous instrument to fool with simply because conditions are constantly changing, and therefore it is uneconomic to define parity in terms of price relations in any past period. Furthermore, Government support tends to interfere with the economic functioning of farm products. This is perhaps best illustrated by noting that in recent years the trend of hog production has declined sharply whereas the supply of corn has steadily increased. The normal correlation between corn supply and hog production has broken down simply because it has been more profitable for the farmer to seal supplies under the Government loan than to turn the corn supply into pork. Under Government support prices of basic commodities such as wheat, corn, and cotton have reached levels that are not supported by statistical or economic forces.

Briefly, there are two major points to keep in mind: First, the principle of guaranteeing a fixed price for important farm products over an indefinite period is impractical, and second, the stage is being set for an increase in the surplus supply in the hands of the Government which has already reached proportions resembling a pyramid

THE McGILL INDEX OF ALL COMMODITIES

	Aug. 1939	*Jan.* 1941	*Per Cent Increase*	*June* 13, 1941	*Per Cent Increase from Jan.* 1941	*Per Cent Increase Since War Started*
ALL COMMODITIES	64.4	75.1	17%	83.4	11%	29%
Industrial	71.3	80.6	13	87.7	9	23
Livestock	58.1	73.9	27	86.4	17	48
Agricultural	53.4	63.3	18	72.1	14	35
Building Materials	85.5	104.9	23	107.5	3	26
Chemicals	87.5	89.0	2	90.1	1	3
Fuels	66.6	72.1	8	77.3	7	16
Hides and Leather	77.4	92.0	19	105.6	15	37
Non-Ferrous Metals	70.9	79.3	12	80.6	2	14
Ferrous Metals	100.1	103.8	3	103.8	0	4
Paint Materials	68.5	74.6	9	82.8	11	21
Paper and Pulp	75.6	90.3	19	94.7	4	25
Fine Textiles	58.5	70.1	20	85.0	21	45
Coarse Textiles	49.6	68.8	39	99.5	45	100
Vegetable Oils	60.0	70.7	18	106.6	51	77

on its apex. We mention this phase to show how complicated the price structure becomes when artificial measures are employed.

After all, while it is imperative to inaugurate a control system under war conditions, yet it is not advisable to totally ignore economic laws and economic forces. Here is the picture in a nutshell: The physical volume of production is inescapably headed to new all-time peaks. A tight supply situation will prevail for an indefinite period. Delays in delivery cannot be avoided, and non-essential industries will be seriously handicapped. The underlying trend of producing costs, particularly wage rates, is increasing at an exceptionally fast pace, and is bound to result in higher producing costs. The cost of living has recently shown the sharpest advance since the outbreak of warfare. As usual one thing leads to another, and consequently it is not a surprise that commodity prices have followed in the wake of insurmountable bullish forces.

All Commodities

During the past month seven of the individual groups in the "Monthly Price Index for Hospitals" registered strength. It is well to keep in mind that today total producing capacity is inadequate to fulfill current and prospective demands. This phase alone is sufficient to have a profound effect upon the commodity price structure. Another angle that is serious involves the difficulties surrounding transportation. World shipping for over a year has been destroyed at a far greater pace than production. As a result, the railroads will be called upon to carry a greater load. We question whether industry has fully discounted the growing danger of tardy deliveries, particularly during the closing half of the year. Meanwhile, the underlying trend of producing costs is upward, this being particularly true of wage rates. Undoubtedly later on price fixing will become more conspicuous but in response to economic forces there can be no escape from considerable higher price levels. Therefore, a fully-stocked inventory position is basically sound until such time as the peak of the emergency is over or until there are more iron-clad signs of peace.

Drugs and Chemicals

Higher prices for quicksilver were primarily responsible for the upswing in the Drug and Chemical Index. The increasing volume of domestic consumption is readily absorbing the higher level of production. Stocks held by consumers and dealers on May 1 totaled 11,700 flasks, as compared with 14,100 at the beginning of the year. Although the Government will prevent important price advances from current levels, the statistical position will remain strong simply because this country must send considerable quantities of quicksilver to England. There are signs of a tighter supply situation in chemicals, and, obviously, the underlying trend of producing costs is upward.

Paper Products

Production of paper at capacity levels is rapidly entering consuming channels. Not only have stocks diminished, but there is some question whether prompt deliveries can be maintained, particularly by the fourth quarter of the year. The trend of producing costs still points upward, and it should be realized that paper prices since the outbreak of warfare have not advanced in full alignment with higher prices for pulp. By the fourth quarter higher price lists for all paper will unquestionably be in effect.

Cotton Goods

There has been a tremendous volume of inventory building for all types of cotton goods in the past few months. Many producers are completely sold out for their 1941 production, and in some cases we have heard of orders being placed for early 1942 output. Obviously, a situation such as this is dangerous. Production apart from Army and Navy needs has held above normal for an extended period. Any Government restrictions on consumer incomes will inevitably have some repercussion in cotton goods markets. Such restriction, however, is not expected to come this year, but will be of increasing importance in 1942. The action of the Government in placing ceiling prices over combed yarns indicates that sustained price strength will not be allowed in other finished goods markets.

Fuels

There is some doubt as to whether important price advances in bituminous will become effective during the last half of this year. However, there is no question that shipments from producer to consumer will be delayed and that there will be actual shortages in some areas. The use of bituminous will probably be increased in the Eastern area because of the reduced supply of fuel oils. Many industrial plants are planning to replace oil with coal this year. Production of bituminous has shown no sharp increase despite the heavier volume of consumption. This is due in part to the fact that shortages of coal cars have already developed. In regard to fuel oil, there is no doubt that the tanker situation will be restricted this year, but at the same time we believe it possible for the present and prospective supply of tankers to deliver sufficient oil for all use to the Eastern area. As a matter of fact, tankers are now being taken off other runs for use on the Atlantic seaboard. Prices for both industrial and heating oils will naturally be subject to some expansion during the last half of this year and the early months of 1942 as a result of increased producing costs.

However, any important advance may result in action by the OPACS. As a matter of fact, many industrial plants are reverting to coal this year, with the result that the strain will be somewhat lessened. Price advances in gasoline since the early months of this year have been sizable. Further increases in consumption will not affect the price structure simply because the OPACS is adjusting prices in the principal consuming areas to the quotations in the producing sections. However, consumption since the first of the year has run well above previous record levels. Reserves of gasoline are being depleted, and the statistical position of the industry is strengthening steadily.

Groceries

In January of this year the price index for groceries was 53.6, whereas the latest figure is 77.0. Canned goods, cocoa, coffee, vegetable oils, lard, flour, and rice have led the advance. Strangely enough, there is no shortage of food and feeds, but the Government has made a special effort to narrow the price differential between industrial and agricultural products. Loan rates on basic crops have been elevated and minimum prices established, which of course always results in a huge wave of speculative interest. New crop prospects are exceedingly favorable and hence an unbalanced supply-to-demand ration is bound to prevail for an indefinite period. The policy of fixing a minimum price for hogs will automatically speed up the production cycle is in the third consecutive year of expansion. Higher producing costs and expanding consumer demand will play an important part in keeping prices of meats at a higher level throughout the next year.

Dairy Products

A glance at the Index table clearly illustrates the great price revival in dairy products since June a year ago. Despite Government buying of butter on a broad scale the basic fact remains that, reflecting seasonally expanding production of exceptionally heavy volume, stocks are entering storage in greater-than-average proportions. Even though employment and purchasing power are at record levels, high retail prices for butter cannot help but curb consumption. The price trend has weakened from the peaks reached in May, but it is unlikely that the market will drop back to the minimum of 31 cents. As regards cheese, under the lend-lease bill huge quantities of cheese amounting to 250,000,000 pounds will be drawn out of the market. However, aggregate purchases will account for a relatively small proportion of total milk production. There is every assurance of ample supplies, but here again, Government purchases and minimum prices of dairy products will constantly work against important price weakness, whereas there is a strong prospect of a higher price average next fall and winter. As for eggs, here again markets reflect Government support rather than the exact supply-and-demand position. There is no question that huge supplies of eggs in frozen or dried form will be sent to England. On the other hand, with a minimum price prevailing there is a definite incentive to increase production, and this is exactly what is taking place. An extensive increase in production is under way, but prices will not return to the minimum of 21 cents principally because of relatively high producing costs.

Miscellaneous

Huge quantities of canned foods will be sent to England over the course of the next year. Abnormal price strength will not be tolerated by our Government, but reflecting increasing producing costs any change in the price trend of canned foods strongly favors the up side. As previously stated, there is no prospective shortage of foods or feeds in the United States, but Government support of price and large commitments by Government agencies for prospective purposes will constantly act as a foundation under agricultural commodities as a group. From a long-range standpoint the underlying trend of both industrial and agricultural commodities remains inescapably upward.

McGILL MONTHLY PRICE INDEX FOR *HOSPITALS*
1926 = 100

	June 1933	*June* 1934	*June* 1935	*June* 1936	*June* 1937	*June* 1938	*June* 1939	*June* 1940	*May* 1941	*June* 1941
ALL COMMODITIES	54.0	64.3	72.2	70.3	86.4	69.6	67.8	69.6	80.4	83.4
Drugs and Chemicals	71.4	75.3	72.4	69.3	69.8	68.4	69.8	82.8	79.5	80.2
Paper Products	69.5	84.7	81.2	81.0	99.9	91.8	84.9	92.4	98.1	98.1
Cotton Goods	68.9	83.0	84.5	70.8	94.6	68.1	71.9	74.9	100.2	106.6
Surgical Dressings	67.4	82.8	81.6	75.2	85.6	70.4	66.6	74.3	74.3	75.6
Fuels	49.8	78.6	74.3	71.2	94.9	84.2	89.2	96.7	100.1	100.1
Groceries	50.0	55.9	72.2	67.1	78.3	58.5	52.0	52.1	74.2	77.0
Meats	53.9	62.7	80.6	80.1	93.6	78.8	74.4	77.5	84.6	88.1
Fresh Fruits	71.7	119.2	93.8	67.5	84.2	54.3	57.0	61.1	58.1	53.6
Canned Vegetables	78.9	91.9	90.0	85.5	81.1	68.9	67.2	65.2	75.6	77.4
Canned Fruits	64.4	72.9	77.7	72.2	80.3	75.6	68.8	66.0	69.9	69.9
Dairy Products	54.5	54.9	64.2	70.1	70.2	62.7	56.2	60.5	79.8	80.2

Keeping Trained Personnel in Physical Therapy Department During a National Emergency

FREDERIC C. BOST, M.D.

THE present national defense program and preparations for a national emergency has placed a great responsibility upon existing hospital and medical services. These services must be rapidly enlarged to meet an ever expanding industrial and military mobilization. The hospital is doubly taxed by this program. In the first instance, industrial expansion greatly increases civilian needs for hospital facilities and in the second, the hospital must provide numbers of its professional and technical members to staff the military forces of the Nation. All this expansion must be accomplished without decreasing either the quality or the efficiency of the service to be rendered. In fact, the medical services must be constantly improved to meet the increased needs which develop during the emergency period. In addition, provision must be made for the continuation of studies and researches for the advancement of medical knowledge. The needs of the defense program reach all departments of the hospital, requiring the training of many additional skilled workers. In almost all instances, this calls for a farsighted preparedness because the training of technical workers consumes a period of time which cannot be reduced below certain definite limits.

The physical therapy department presents no exception in this regard. A nine month period of training is the minimum time for the preparation of an adequately trained physical therapy technician, and even this presupposes considerable preliminary education.

Basic Requirements

In preparing for a well-trained personnel in the physical therapy department during a national emergency and for additional personnel which may be "loaned" to the military forces the hospital administrator must be guided by two basic requirements. These are:

1 The American College of Surgeons Standards for department organization

2 The educations standard for technicians established by the American Physiotherapy Association

Strict adherence to these requirements will insure the maintenance of the high standards of service which have been developed gradually and carefully since World War I. Only an insistance that these basic measures be met will protect the advantages gained over the past years. Certainly, a period of urgent need is the moment for the best service procurable and no inferior substitutions can be acceptable at such a time.

If the hospital is to uphold these standards provision must be made at once to obtain sufficient numbers of adequately trained technical aides. Inquiry reveals that there are now registered approximately 1500 proficiently trained physiotherapists. That present needs are not entirely fulfilled, is demonstrated by lack of unemployment and the difficulty in obtaining trained technicians. Miss Emma Vogel has stated that approximately four hundred physiotherapy aides will be necessary in the present national defense program. Miss Catherine Worthinham has estimated that perhaps two thousand additional technicians will be necessary to adequately meet a national emergency. This is a modest estimate when all the requirements of expanded civilian employment and military forces are to be satisfied.

Contrasted with these estimates is the report of the American Medical Association for March 30, 1940, which revealed that there are only sixteen approved schools for physical therapy technicians with a total enrollment of 192 students. This thoroughly emphasized the need for immediate organization of additional training centers.

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Prerequisites for Admission to Training Schools

The requirements for admission to training schools have been designated by the American Physiotherapy Association and the American Medical Association's Council on Medical Education and Hospitals. They are:

1 Two years or sixty semester hours of college, including courses in physics and biology
2 Graduation from an accredited school of nursing
3 Graduation from an accredited school of physical education

These three groups constitute the sources from which acceptable trainees may be drawn. Due to the present need for nurses it is not likely that great numbers from this classification can be expected at this time. However, the large number of university students would seem to offer a supply sufficient to meet all requirements.

Preparing for the Possible National Emergency

The hospital administrator may prepare for the possible national emergency by—

1 Cooperating in the registration of available assistants—

Trained physiotherapists: Such a registration is being conducted by the American Physiotherapy Association and by the American Red Cross. There are already available listings of the membership of the American Physiotherapy Association and the American Registry of Physical Therapy Technicians. Further search for registrants may bring to light adequately trained technicians who have been previously unclassified.

Students: Listings of prospective students could be obtained by circularizing the various universities and making known the opportunities that exist in the field of physiotherapy. This effort can be carried to the schools of physical education and the schools enrolling science majors.

2 Aiding in the training of physiotherapist through—

The expansion of existing approved schools of physical therapy.

The establishment of additional schools of physical therapy. The cooperation of several hospitals could be utilized if sufficient single hospital facilities were lacking.

3 Improving existing physical facilities within the hospital under his guidance. The rearrangement of the physical therapy department and the addition of new equipment often lends itself to a more efficient and increased service. By this means a greater case load may be carried effectively without increasing the personnel of the department.
4 Working with the assistance of the medical and physiotherapy departments, toward the standardization of certain procedures. There are many objections to standardization of procedure but carefully planned and supervised measures might be utilized to lighten the burden of the personnel.
5 Working with the medical staff of the hospital in aiding national defense by the organization of physical therapy units for use with the military service. Cooperative planning may make available many workers without depleting the personnel essential for hospital operation. This cooperation may well involve grouping of activities by several hospitals in order that repetitious services may be spared.

Through these various means the hospital may register and train a large army of adequately prepared physiotherapists who would be capable of maintaining the present high standards of physical therapy treatment. Efficient planning and reorganization will make it possible to loan valuable aids to the Government without jeopardizing the care of the civilian patient.

In conclusion, it may be pointed out that the ways and means which have been considered provide only for a highly trained and skillful corps of physical therapy workers. No others should be intrusted with the treatment of the sick and injured even during a national emergency.

Babies Born in Hospitals

There are 832 cities in the 48 states for which data are available as to the number of live births attended by physicians in hospitals. In almost half of the 832 cities, 75 per cent and more of the live births occurred in hospitals. In 57 cities, less than 25 per cent of the births occurred in hospitals.

A different picture is presented when these figures for rural areas are tabulated. The state showing the highest per cent of hospitalized rural births was California, in which 69.4 per cent of the births in rural areas occurred in hospitals. The state showing the lowest per cent of births in hospitals was Alabama, in which 3.0 per cent were hospitalized. The median per cent among the 48 states was 25.5.—*Division of Vital Statistics U. S. Census Bureau.*

New Jersey State Hospital Association President's Address

F. STANLEY HOWE

AT PROBABLY no time in history was the past as unimportant and the immediate future so engrossing as now, and in this general statement the position of our hospitals is no exception. Not many years back we were thrilled at the new business which was coming to us through membership in hospital service plans, which permitted many people to use our hospitals who formerly would have staid at home. Now, due in some measure to this increased influx, our hospitals have filled up and we are faced with the problem of finding space to meet the demands upon us. Shifting populations, probably temporary in character, have moved in upon our hospitals in industrial areas, like mists from the sea, crowding their normal constituents, and yet with insufficient permanence to justify large capital expenditures for their accommodation.

Financing the Care of the Indigent Sick

Our most acute problem is that of financing care of the indigent sick. In the lush days of the NRA it may have seemed that the generous hand of a paternalistic government would continue to reimburse us for the care we were giving to the unemployed and under-privileged. This mirage has gradually faded, leaving us confronted with a new set of technicalities which municipal governments have adopted as their own, following the pattern of the state disbursing authorities.

Beneath all this the clear legal responsibility of the community to pay the hospital for the care of its indigent sick has been lost sight of and most of us are feeling the lack of adequate municipal payments for which we stand in increasing need. Until the unquestioned right of the hospital to be protected in its losses on the care of indigent citizens has been definitely established we shall continue to lead a precarious existence, especially with the rising costs, both of commodities and services.

One of the mercies of the so-called "Depression" was the fact that costs declined and both the institutions and their employees could make a dollar go much further than they can today, or will be able to do in the predictable future. Just how long we can hold together against the opposing forces of rising costs and reduced consumer net income, no one can predict. But in any event we must keep these facts constantly in the public mind, so that at no time can it be said that we allowed a crisis to develop without a warning on our part.

If emergencies create critical situations which hospital policies are unable to meet, or if the cost of maintaining our institutions exceeds the funds available to meet them, particularly in the matter of wages, the position of our hospitals may resemble the now pathetic Maginot Line. Created to meet the needs of a "War of Position", it was considered impregnable. It fell through lack of mobility and freedom of action in a new "War of Movement." In the same way our highly developed and implemented organizations may be overrun unless our policies can be changed from the conservatism of the recent past to a free-moving and many-sided attack on the financial problems created by the economic blitzkrieg which is sweeping away the supports of yesterday.

The Decreasing Support of Philanthropy Its Causes

Lord Macaulay, writing to an American in 1857, expressed grave doubt that our form of government would survive certain economic crises. He feared that distress of the many would lead to spoliation of the rich. This spoliation would produce more distress which in turn would

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produce fresh spoliation. Said he, "There is nothing to stop you. Your Constitution is all sail and no anchor".

Apply this to our hospitals. Out of the gifts of the more fortunate have been created a vast system of beneficient institutions dedicated to the service of all. Continued benefactions have till now kept them abreast of the latest developments in the healing art. Economic burdens, chiefly taxes, on the benefactor class, are now cutting off these gifts at the source. If the public does not return a sufficient portion of these tax funds to our hospitals, both for capital account and for upkeep, they will gradually be depleted. As this process progresses our services will fall in quantity and quality and justifiable complaints will be made. These complaints will in time alienate public good will and further limit our resources so that in time we shall be obliged to abandon our voluntary hospitals either to the Sheriff or to public control, and Macaulay's cycle will be complete.

If in building up our physical plants and our great systems of medical care we neglect to develop financial and social policies suited to these changing times, then, to paraphrase Macaulay, it may be said of our hospitals that they are *"all anchor and no sail."*

A hospital is an immensely sensitive thing, and few of its economic problems can be solved as they can in industry, by the use of machines and by speed-up methods. All but a handful of our personnel came in direct contact with the patient and his friends and upon their skill, loyalty, and enthusiasm rests our success. Excessive pressure on the nurse, the technician, or those who must plan and execute complicated routines, even forcing the less skilled but indispensable groups in their appointed tasks beyond safe working loads, is as risky as holding a stop watch on the surgeon or the clinician.

Efficiency

Efficiency in industry may be determined by the speed, accuracy, and cheapness with which an article of specified design and quality can be produced. In a hospital, efficiency is the degree of skill, safety, and comfort with which a distressed human being can be carried through a very personal medical or surgical emergency. The test of our success is largely in the impressions created in the mind of the patient and his friends by every hospital person with whom they have contact. These workers have no say in how much free service the hospital chooses to give and will not be impressed by deficits created in so doing. They have a job to do and will do it well so long as we do our duty by them.

If our hospitals could be run like our factories, we should probably have a machine which would shave an abdomen in thirty seconds instead of ten minutes. By applying suction to air tight rooms we would draw the dust from the window sills, behind the radiators and under the bed without waking the patient or moving the furniture. Our food trays would pass on a conveyor and a fixed amount of each article on the menu would be deposited in its place, though of course every tray would have to be alike. Our babies would be bathed from a moving belt and pneumatic tubes would shoot them back and forth to their mothers. An automatic menu-maker would prescribe the diet for each day in the year without time and thought on the part of the dietitian, though of course it could not take into account the availability and economy of foods in the daily market. Patients would be put into a state of coma and sent on conveyors to and from the operating room without the need of orderlies and nurses to transport them. Sheets would be changed on the beds like the paper on the head rest of the barber's chair. Patients would fluff up their pillows by jets of compressed air, without having to call the nurse, and lie detectors would be used to determine the accuracy of statements given to our admitting officers and our collection departments. The superintendent would allow himself just so many minutes to settle each problem coming to his desk, and with television reaching every part of the hospital, could step up the pace at any point where human or mechanical energy seemed to be lagging.

It was long ago said of the meat packing industry that by remorseless efficiency it was able to turn to account every part of the critter except the squeal. Perfect industrial efficiency applied to the hospital might stop at about the same point—but unlike the packing plant—we cannot afford to ignore the "squeal". It would be our complete and well-deserved undoing.

If I were granted one wish both for myself and for all who work together in the hospital field, it would be that each one of us may be endowed with sufficient energy, imagination, patience and good nature to carry on in our several jobs without loss of poise until that day when the world at large can be guided safely into more tranquil waters where a day's work will produce a good day's result. I can only hope that each one of us may live to see the day when our efforts can again be applied constructively in building up a better and better service for the sick, rather than in merely trying to protect our hospitals from the distintegrating forces of a world gone mad.

Laboratory Control for Institutional Laundry

PAULINE BEERY MACK, Ph.D.; JOSEPH F. KRAWIEC and HORACE W. COOPER

THE state-owned institutions of the Commonwealth of Pennsylvania under the Departments of Welfare, Public Instruction, Health and Military Affairs maintain a program of research and laboratory control for their extensive laundry operations at the Pennsylvania State College. The populations of these combined institutions—50 in number—total in excess of 40,000 persons, with an annual laundry volume which is approximately 35,000,000 pounds. This program, which has been in effect for the past seven years for the Department of Welfare and for the past five years for the other Departments, has been shown by actual long-time trial to be responsible for extensive savings in length of life of textile fabrics, to say nothing of increased satisfaction resulting from laboratory control of the laundry process and a consequent high order of performance with respect to soil removal, whiteness retention, and color and strength preservation.

Research in Fabric Damage

The breaking strength of laundered fabrics is likely to be high where bleach is used without keeping the bleaching conditions under rigorous control. The strength of the fabric depends upon the use of a small quantity of bleach at a controlled temperature and pH. Two institutions have been shown to have incurred fabric breaking strength losses of 45 and 3 per cent, respectively, in 50 washings, without being materially different in stain removal or sterility—the primary purposes for which bleach is used. The difference in the breaking strength results comes from the control of the bleaching operation.

The control of the bleaching operation, which is paramount to high preservation of breaking strength, is not incompatible with the retention of whiteness in white fabrics nor with soil removal. Through the period during which the state-owned institutions have been under laboratory control, breaking strength preservation has been gradually improved, and soil removal and whiteness retention have not been sacrificed, but have shown drastic betterment.

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Soil removal and whiteness retention efficiencies are of great importance in the power laundry operation. A study of the soil removal and whiteness retention results of all of the welfare institutions from 1934 to the present time showed only a limited amount of improvement from the beginning of 1934 through 1936, whereas marked improvement began to occur near the beginning of 1937; the latter has been maintained and even increased up until the present time. An explanation of this situation can be found in the fact that, during the first two years of work at the college with the welfare institutions, no funds were available for visiting the plants and explaining the results of test bundles to the plant managers. Test bundles were sent through the institutional laundries, and results of the tests were sent to the respective institutions. The personal contact required in order for the results of the test bundle analyses to be understood by the laundry managers with consequent improvement of procedures, however, was lacking. In 1937, a research fellow was employed not only to conduct research studies on improved methods of institutional laundering, but also to visit the respective plants, and interpret the laboratory research and test bundle results to those actually carrying on the institutional laundry work.

The Test Bundle

The mention of a test bundle brings us to the point of describing how laboratory control can be maintained in one central laboratory for laundries scattered over the entire Commonwealth. The Pennsylvania laundry test bundle was designed to serve as a measuring stick to determine whether or not a power laundry is performing its

function with the maximum efficiency. To set down the requirements of good laundry performance, the following three points should be stressed:

The maximum of general soil and special stains should be removed;

There should be a minimum change in the initial size, shape, whiteness, or color of the textile articles laundered;

There should be a minimum loss in breaking or tensile strength of the fabrics which are laundered.

A test bundle consisting of standard pieces of cloth designed to measure the different performances required in an efficient laundry procedure has been devised. The test bundle consists of a standard soiled fabric, a standard white fabric, and a standard breaking strength fabric. The standard soiled piece is so designed that a constant amount of soil of a standard composition is present, and the soil is so applied that it will be removed to the same degree by the same laundry procedure. The standard white fabric is added to show whether or not hard water, improper rinsing, and other factors may be operative which will gray or yellow white fabrics which are being laundered. The standard breaking strength fabric gives a measure of the initial and final strength, and hence enables a final calculation to be made of the amount of breaking strength loss which a number of repetitions of the same washing formula will cause in fabrics undergoing washing.

A checked black and white material with numbers on the right serves to enable the laundry manager to keep track of the number of times the test fabric has been washed. After each washing, one numbered square is cut off from the test bundle, and when the bundle has been washed fifty times, the detached squares and the rest of the bundle are sent to the control laboratory for analysis.

The philosophy dominating the use of the laundry test bundle is much the same as that which causes the manager of a steel mill, of a textile mill, of a glass works, or of any one of a hundred other types of manufacturing enterprises to take sample specimens from the different batches of material undergoing manufacture for purposes of testing. The testing laboratory can ascertain by means of analytical techniques whether the procedure which is being followed in making the respective articles is standard and whether the final article will have the required specifications.

In laundry practice, the final result is not a commodity, but a service—the result of a process. Consequently, the efficiency of the process is measured in terms of what it does to the articles which are handled. Textile fabrics, either in the form of wearing apparel or of household fabrics, will tell the story as to whether or not they are washed clean, whether their original color or whiteness has been preserved, and whether the strength is left intact. Instead of using the rule-of-thumb subjective method of ascertaining through trial and error whether the service to these textile articles is satisfactory, a laboratory method of keeping the process constantly under control has been devised. Standard fabrics are washed with the general fabrics going through the plant, and the results are measured numerically in terms of efficiency.

The Visiting Chemist

In addition to the laboratory control afforded by the use of test bundles, close contact with the respective plants by a research fellow on the staff of the Pennsylvania State College enables laundry managers in the state-owned institutions to interpret the meaning of the test bundle, which must be repeated fifty times each quarter. The research fellow visits each institutional laundry at least once a year and makes intermediate visits upon call. At the annual visit, each plant receives a yearly rating of its mechanical efficiency based upon a thorough check of the condition of the equipment and the general appearance of the plant. Points relating to the performance of the equipment are given a thorough check, and the plant is rated numerically on the basis of numerous points of housekeeping. The following mechanical features are personally checked at the time of each visit to the institution: (a) Accuracy of water level gauges; (b) Accuracy of thermometers; (c) Accuracy of timing and dump devices; (d) Working conditions of automatic water valves; (e) Working conditions of automatic safety devices; and (f) Conditions of the washing, drying, and ironing equipment.

In addition, titrations and other analyses are made of each of the solutions used in the laundry operation. The laundry manager's problems are discussed with him personally, and the interpretation and significance of previous test bundle reports are explained.

Besides the analysis of the test bundle in the college laboratory, a detailed program of research on improved methods of laundering is carried on; damaged articles are analyzed in order to ascertain the source of damage and the means of preventing similar damages in the future; recommendations are made as to the type and size of potential new equipment; analyses of water, particularly for the hardness, are carried on; and rec-

ommendations concerning amounts and kinds of soaps and other detergents are offered.

The financial value of the fellowship to the state-owned institutions has been summarized in a report by William A. Sponsler, III, Assistant Budget Secretary, Governor's Office, presented before the annual meeting of the operators of the institutional laundries of the Commonwealth held at the Pennsylvania State College on June 15, 1939. In this report he states that the state-owned institutions will have well over a million dollars invested in total laundry equipment when the present General State Authority building program will have been completed. It is his contention that it is important to know this investment is well used and well cared for. He places particular emphasis on the need for the wise choice of laundry supplies and for care of textile articles so that cloth fabrics owned by the Commonwealth will last as long as possible.

Bacteriological Studies

In the institutional laundry, one very important study of long-time standing has been in the field of bacteriology; this study has been carried on cooperatively between the Division of Textile Chemistry and the Department of Bacteriology. First of all, the bacterial counts at different stages of the laundry operation have been measured, and second, the survival of specific pathogens has been noted.

The results of these studies are making it possible to recommend to the power laundry procedures which will cause complete reduction of over-all bacterial count as well as in disease-producing organisms.

In calculating the reduction of tensile strength loss which occurred in the Department of Welfare during a two-year period of the State College fellowship, he estimated that the amount of reduction in loss of strength through this period was such as to cause a 20 per cent increase in the length of life of the textile fabrics owned by the respective institutions at that time.

When one considers that institutions using an uncontrolled amount of bleach frequently may have a loss of breaking strength in excess of 50 per cent on fifty washings as found by repeated analyses made in the Pennsylvania State College laboratory, the enormous savings in bringing this loss down to the present state institutional average of 7.4 per cent for fifty repeated launderings is readily seen.

Many requests through the past several years have been received from state-aided Pennsylvania institutions for assistance in the control of their laundry procedures. Recently, a plan has been worked out whereby the state-aided institutions may participate in the research and control fellowship of the state-owned institutions. At the present time, provisions are available for adding only about ten institutions to the program. Cooperation of the state-aided with the state-owned institutions in their laundry research and control presages a new era in the scientific approach to a highly technical problem—the proper washing of institutional textile fabrics.

Dr. Harold Macomber Coon Succeeds Dr. Robin C. Buerki as Superintendent of the Wisconsin General Hospital

The Board of Regents of Wisconsin General Hospital, Madison, Wisconsin, has announced the appointment of Dr. Harold Macomber Coon as superintendent of the Wisconsin General Hospital and the Wisconsin Orthopedic Hospital for Children, to succeed Dr. Robin C. Buerki, resigned.

Doctor Coon also received the appointment of professor of hospital administration of the University of Wisconsin and executive secretary of the Medical School.

Doctor Coon received his B.S. degree from the University of Wisconsin in 1920 and his M.D. degree from Pennsylvania in 1922; he served his internship at the Wisconsin General Hospital; and upon completion of his internship became director of the River Pines Sanitarium, Stevens Point, Wisconsin. For the past four years Doctor Coon has been medical director and superintendent of the Wisconsin State Tuberculosis Sanitarium at Statesan, Wisconsin.

Syracuse General Hospital

The General Hospital of Syracuse, New York, has completed plans for the construction of two wings and a new nurses' home, both to cost $500,000. The hospital is administered by Carl P. Wright, executive secretary of the New York Hospital Association.

The new construction will increase the number of available beds from 110 to 185, and the nurses' home will provide for 74 nurses and will be modern in every respect, with classrooms, laboratories, and elevators. The present nurses' home will be remodeled to provide for an out-patient department on the lower floor and interns' quarters on the second and third floors.

Training the Hospital Pharmacist

B. T. HOWILER

HOSPITALS according to our modern definition, are buildings or institutions for the reception, care, and medical or surgical diagnosis and treatment of the sick or injured. The early hospitals, unquestionably, used drugs, herbs, chemicals and various medicines in the treatment of their patients. From records available, it seems that no one individual was responsible for the duties pertinent to the storage, manufacture, assay or distribution of the medications for these patients. It was in December of 1752 that the first hospital pharmacist received his appointment to serve in the nation's first public hospital, the Pennsylvania Hospital in Philadelphia founded by Benjamin Franklin. In the minutes of the second year of existence of this old hospital, which today still serves the city of Philadelphia, he records the great step which is reflected today in the service of pharmacy in the leading institutions of this country. Franklin stated:

> ..... in December, 1752, the Managers ..... opened an Apothecary's Shop in the Hospital; and it being found necessary, appointed an apothecary to attend to the medicines daily, according to the prescriptions ..... Jonathan Roberts, who was warmly recommended, was appointed as the first apothecary of the Hospital, and served the institution faithfully and well until the spring of 1755, when John Morgan, who was apprentice, succeeded as the second apothecary at the Pennsylvania Hospital. He was appointed on May 19, 1755."

We may well be proud of these first hospital pharmacists. They set the example which has been the boast of hospital pharmacy even until today. With this auspicious beginning of the profession of hospital pharmacy, records show, that in the larger institutions and especially those connected with seats of learning, the realization of the economy and responsibility of the proper control of the distribution of medications was felt by the administrations. In these institutions, an attempt was made to delegate the responsibility for the pharmaceutical procedures to a pharmacist.

Unfortunately, in some of these instances, we find both from records and present day observation, an individual, sometimes a pharmacist in charge of a so-called pharmacy usually designated as "drug room" in some isolated or forgotten part of the hospital. The profession of pharmacy has had no one to blame but itself for the existence of this condition. It has been brought about partially because of the lack of qualifications and training of the pharmacists available for this particular specialty in the pharmaceutical profession. This lack of training and qualifications in the individuals available has led to a lack of confidence on the part of both the medical profession and the hospital administration in the value of a complete pharmacy service.

Value of a Complete Hospital Pharmacy Service

We might ask ourselves this question, "How important is a complete pharmacy service to the hospital?" Rightly enough, there seems to be a surprising agreement of opinion both to its importance and present neglected state. The work of pouring liquids and counting pills, frequently can be and probably is done by some person other than a pharmacist.

The real value of a pharmacist in charge of a pharmacy service in a hospital cannot be measured in his ability to count pills or pour liquids. I believe no one but a pharmacist properly trained should bear the responsibility of the compounding and dispensing of drugs in the hospital of today.

How many hospital administrators can truthfully say to themselves that the pharmacy service available to the patients and staff of their institutions is on a par with their nursing, surgery, or dietary service? How often we see a hospital offering the best services available as far as din-

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ner service, tray service, and nursing service is concerned, and is making but small pretense at offering a pharmacy service which is at all comprehensive.

The Adequate Pharmacy Service in the Hospital

The pharmacy committee of the American Hospital Association in one of its recent reports states that an adequate pharmacy service is of intimate concern to the doctor, nurse, pharmacist and administrator, yet, few departments in the hospital have been given less attention. This department has been titled by such men as Dr. Malcolm T. MacEachern as "the forgotten department," "pharmacy, the hospital's stepchild," and other descriptive names.

Unusual as it may sound, in 1936 of all the United States hospitals only 1419 institutions employed 1901 pharmacists; yet out of every dollar spent by the hospital 4 percent was spent in the purchase of pharmaceutical supplies. The size of the hospital is no criterion as regards the part the pharmacy may play in its success because this department is one of the most extensively used facilities of the hospital. Dr. Lewis E. Jarrett, director of the Hospital Division of the Medical College of Virginia stated recently, that any hospital of 50 beds or more is justified in hiring a pharmacist for definitely economic reasons.

Dean Spease of Western Reserve University has advocated that the education of the hospital pharmacist should more closely approximate that of the physician. This seems particularly true in light of the fact that the pharmacist in the modern hospital must have knowledge closely related to that of those individuals with whom he daily comes in contact. This fact becomes more and more apparent because of the tremendous advances being made in chemotherapy, serology, and endocrinology. This man today must either have information on or ready access to information on the pharmacology, toxicology, and posology of the multitude of newer medications daily being presented for use. In addition he must be freely acquainted with the pharmaceutical and chemical peculiarities of these medications.

In light of the tremendous responsibilities, some of which I have just pointed out, placed on the individual who represents the pharmacy service in a hospital, it is easy to understand the situation with which the recent graduates of our colleges of pharmacy are confronted. From the standpoint of the education of the embryo pharmacist, his chosen profession may be divided into four classifications, namely: retail pharmacy, manufacturing pharmacy, teaching, and hospital pharmacy. From the teaching standpoint, each division presents its own problems. Because of these different problems some of our colleges have attempted a solution through the offering of training in each particular field of pharmacy. Through this means selective training may be taken by interested students in any of the four fields of the profession.

The Pharmacist Intern in the Hospital

It has been said of medicine, that, figuratively speaking, the profession raised itself by its own bootstraps by virtue of the intern system. By this same token, it does not seem improbable that the profession of hospital pharmacy cannot be elevated by the same means. How else than through internships in hospital pharmacy is the type of training necessary to the modern hospital pharmacist to be obtained? Through what other means will an embryo hospital pharmacist have the opportunity of receiving not only actual pharmaceutical training in the operation of a pharmacy service, but also the indispensable training in pharmacology, manufacturing pharmacy, food and drug analysis, and other subjects so closely allied to the profession of medicine? In what other manner are these students to get the feel of personal contacts with members of the medical profession than through this means which promotes association with resident physicians and interns in medicine and surgery?

Under these conditions they live with these members of the medical profession, eat with them, and discuss their daily problems with them. By virtue of this constant contact and the correlation of medical and pharmaceutical problems they learn of the type of problem with which the physician is confronted and of the type of help the physician expects of the hospital pharmacist in solving these problems. In short, it boils down to the fact that through association with the medical profession the embyro hospital pharmacist comes to appreciate where the services of the department he is to represent tie into the complete operation of the modern hospital.

Qualifications for Intern Training in Pharmacy

In a modest manner, a system of training through internships in hospital pharmacy was inaugurated by the University of California hospital in conjunction with the College of Pharmacy of the University of California in 1938. From the inception of the program, careful consideration has been given the requirements for qualifications of the applicants. All accepted applicants must have completed four years of collegiate training in pharmacy, and have received the bachelor of science degree from the University. These applicants must fall well within the upper bracket of

scholastic achievement, and all must profess an active interest not alone in the professional aspects of pharmacy but particularly in hospital pharmacy as a profession.

Educational Opportunities of the Intern Service

During his period of internship, which may be for one or two years, depending upon the abilities and desires of the individual, the intern will have prepared solutions for parenteral administration, materials for diagnostic use, laboratory reagents, stains, and test solutions, photographic solutions both for x-ray and electrocardiography, and other like solutions. In addition, he will have had valuable experience in the quantity manufacturing and assay control of tablets, liquid soaps, capsules, ointments and like materials profitably manufactured in a laboratory for use within the hospital. He will have been introduced to sources of supply and methods of purchase together with accompanying specifications. He will be thoroughly familiar with complete narcotic control as well as ward drug stock control through routine monthly inspection. He will have attended staff meetings and so will have a definite appreciation of the work done by the various specialties of medicine and surgery. And through these same contacts, together with afforded study of the medical literature, he will have assimilated a great deal of technical information together with a sizable amount of medical nomenclature.

The intern will have completed assigned special problems pertinent to some particular subject of medicine concerning which he will have been required to completely search the literature, and upon completion of this search, to compile his information for presentation in paper form to the instructors in the college for criticism and advice. He will have been afforded the opportunity of continuing his education in the College of Pharmacy to the extent of three units of work per semester. In this manner, the intern may take special training in such subjects as pharmacology, manufacturing pharmacy, or physical chemistry.

These aspects of the internship in hospital pharmacy do by no means encompass the entire field of teaching, experience, and training these individuals receive. In addition, the intern naturally receives information, through personal contact and observation, on the part the hospital pharmacy service plays in the operation of such other departments of the hospital as x-ray, laboratories, dietary, patholoy, and dental and medical clinics. Also, he is experienced with the obligations of the pharmacy service in a teaching hospital wherein a great amount of research and control work is being carried on.

At the University of California Hospital, we are training four or five of these individuals each year. At the completion of their internship they are all fully licensed and are capable of giving an excellent account of themselves in the pharmacy service of any hospital.

The School of Pharmacy and the Intern

At this time, however, I should like to clearly point out, such a plan of internships as outlined, I believe, should not be attempted in a hospital not connected with a university having a college of pharmacy. The reason is quite obvious and should not be overlooked, in spite of the unselfish interest on the part of hospitals. In the first place, the plan is one embracing education first and experience second; and in the second place such complete facilities for education would not be at the disposal of the intern were he not in a teaching hospital operated in conjunction with a college of pharmacy.

In conclusion it is not too much to expect that since the "minimum standards for pharmacies in hospitals" was adopted by the American College of Surgeons and their recommendation passed that "every approved hospital insofar as it is possible and practicable, endeavor to meet the requirements" that the hospital administrators and the medical profession have put themselves definitely on record as recognizing the value of an adequate pharmacy service. However, we must not forget the old adage concerning the fact that cheap help begets cheap service. The hospital administrator should make a thorough study of the requirements for a complete pharmacy service in his hospital and in the event of employment of personnel should be very cautious and discriminating. To quote a statement by H. A. K. Whitney, chief pharmacist at University of Michigan Hospital, in a paper presented at a meeting of the American Hospital Association:

> "The administrator must remember that in selecting a hospital pharmacist, he is in direct competition with those other employers in the other branches of pharmacy. If the hospital administrator is to attract the keener minds in the profession he will have to provide them with an attractive and suitable environment and offer remuneration sufficient to permit happy and comfortable living."

In closing, may I make this observation; that the investment in a capable pharmacist in charge of an adequate pharmacy service will conclusively prove in the business office that the pharmacy is one of the highest net profit departments in the hospital.

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EDITORIALS

Britain's Hospitals

The fortitude of Britain's hospitals and the heroism of their staffs have won the admiration of the hospital field the world over. Not less in peace than in war these hospitals have courageously served not only the civilian population but the armed forces with an increasing devotion. There has been no departure from their age-old tradition of careful, efficient, and complete service to the sick and wounded.

The fearful cataclysm that has involved the whole of Europe, and everything that is fine in its cultural, educational, and welfare affairs, has brought death to hospital personnel and destruction to hospital plants. The hospital at Coventry was completely destroyed by bombing and twenty-one patients, two doctors, and seven members of the staff were killed. The Warwickshire Hospital suffered severely. The hospitals of London, Birmingham, Liverpool, Glasgow, and other cities have been seriously damaged, much of their property and equipment destroyed or damaged beyond repair.

And despite these disasters, Britain's hospitals carry on, assuming their increasing burdens for the care of the sick and wounded, with decreasing facilities and depleted supplies and resources.

These hospitals need many essential things to replace their destroyed and damaged supplies, instruments, surgical dressings, linens and drugs, and so on through the list of hospital necessities. Our American hospitals have been very generous in sharing their own supplies with Britain's hospitals. Hundreds of hospitals in the United States have contributed both funds and equipment.

The American Hospital Association brings this to the attention of its member hospitals and all other institutions. Hospital service knows no geographical bounds, no limits of race or color or creed. It is as universal as humanity itself. It belongs to no one hospital, no one people, no one country. It is the heritage which a finer, cleaner civilization than some parts of the world enjoy today has given us to keep and to hold, just as Britain's hospitals are doing.

Whatever we can do to help them we should do, generously and continuously. Above all others, they are doing the best they can to help themselves. None are more deserving of our assistance and support. In helping them we are not giving, but sharing in both the burdens and the blessings of an unselfish, devoted hospital service.

The Medical and Surgical Supply Committee
420 Lexington Avenue
New York, New York
is the official organization through which contributions of money and supplies may be sent to Britain's hospitals.

Registered Nurses in Hospitals

The report of a survey of employment vacancies of graduate nurses in hospitals, recently completed by the American Nurses Association and the National League of Nursing Education, is informative and interesting.

The survey covered the graduate nurses employed in hospitals, the graduate nurse vacancies in the same institutions, and the number of graduate nurses released for defense.

The survey included 6290 hospitals registered by the American Medical Association. Thirty-one hundred and two, or 49 per cent of these institutions, returned usable information. The survey showed that 83,000 registered nurses were regularly employed by 3100 hospitals, an average of 27 to each hospital. Fifty-four thousand of this number were employed as general duty nurses, an average of 17 to each hospital. The remaining 29,000 were employed in other capacities.

In the reporting hospitals there were 5000 or more vacancies on the nursing staffs, 4000 of which were in general duty positions, 1000 in all other positions.

The 3100 reporting institutions had released 2600 employed nurses to the national defense, or

3 per cent of the total graduate nurse positions, and 54 per cent of the vacancies in those positions.

Accepting the 3100 reporting hospitals as representative of the 6290 in this country, and that the non-reporting hospitals employ proportionately the same number of graduate registered nurses, have the same number of vacancies, and released the same proportionate number for the national defense, it might be assumed that the hospitals of the United States employ a constant of 170,000 graduate registered nurses, of which 109,000 are general duty nurses and 61,000 fill other positions in the hospitals.

The vacancies would number 9900, of which 8200 were in general duty positions and 1700 in other graduate nurse positions.

A total of 5300 nurses would have been released for the national defense.

The nursing organizations are to be congratulated not only upon the coverage secured in their survey but also for the authoritative information which they have assembled.

While it is quite conceivable that the numbers of employed nurses in hospitals and vacancies may be lower for the field as a whole than for the 3100 reporting hospitals, the figures arrived at closely approximate actual employment and vacancy experience of the hospitals in this country.

"Certificates of Priority"

No blanket priority has been established for hospitals. B-4 priority rating is the rating immediately below that given to supplies and equipment essential to the national defense. B-4 includes

Dental and surgical supplies

Drugs and pharmaceutical equipment

Hospital equipment and utensils

This rating gives hospitals a very favorable position and will enable them to make their purchases of needed supplies and equipment with a minimum of inconvenience and delay in delivery.

The spokesman for the Director of Priorities of the Office of Production Management in Washington, in a conference held June 18 with a representative of the Joint Advisory Committee, stated that the Division realized the necessity of an uninterrupted flow of hospital supplies to the individual hospitals, that the Priority Division was particularly sympathetic to hospital requests, and that hospitals would be able to secure what they needed; further, that hospitals would suffer no great inconvenience so long as this present policy obtains.

The individual hospital can secure a "certificate of priority" for materials and articles on the present priority list by forwarding a request for such certificate of priority on form PD-1, addressed to the Director of Priorities, Office of Production Management, Washington, D. C.

The blank form for making the application for this "certificate of priority" can be obtained by addressing a request for the forms to that office.

For those hospitals now engaged or about to engage in an expansion or construction program a blanket "certificate of priority" for equipment and supplies necessary to complete the expansion programs will be granted upon application.

The spokesman further stated the Director of Priorities would give "prompt and favorable" consideration to applications made by individual hospitals for "certificates of priority." The spokesman emphasized that the Priorities Division appreciates the necessity for uninterrupted flow of hospital supplies and equipment to meet the needs of the hospitals and that hospitals would not be greatly inconvenienced but would receive the supplies and equipment they wanted, including those manufactured of raw materials which are on the present priorities list.

Gases in Warfare

Fortunately, the combatant forces have not made a general, intensive use of poisonous, lethal or irritating gases as an instrument of warfare. However, their general use is quite within the limits of possibility. The British are attaching great importance to the provision of precautionary measures and equipment designed to protect the population from the effect of gases and to educating the public in their application.

Gas protective respirators are issued to each person, and strict injunction as to their care and use is imposed upon each recipient. The dangers

of neglect to have the respirators easily available at all times are emphasized. Patients admitted to the hospitals are instructed to have their respirators with them, or in the event they have been forgotten, the patient's relatives are instructed to bring them promptly. Hospitals conduct gas drills at least once weekly, in which both patients and personnel participate. Specially designed gas masks, equipped with outlet valves or helmet respirators are supplied patients suffering from cardiac disease, chronic asthma, or other conditions which cannot be comfortably and safely accommodated by the use of the regular gas mask.

Of particular importance to hospitals is the destructive effect of these gases upon foodstuffs, surgical dressings and supplies, fabrics, drugs and medicine, bedding and furniture, metal instruments and utensils, and supplies manufactured of rubber. The precautions to protect the hospital supplies must be promptly taken and must be effective if serious damage is to be avoided. The use of cellophane, waterproof sheeting, and other impermeable material as wrapping or covering for supplies affords protection in almost all instances.

Gases are both vaporous and liquid. The vaporous gases are less destructive than liquid gases and when these gases contaminate the supplies the contamination can be removed with little difficulty and within short limits of time. If the supplies are protected by impermeable wrappings, and these wrappings are intact, there is little or no danger of contamination by vaporous gases. Vapor gas contamination will not seriously affect rubber sheeting, surgeons' gloves, hot-water bottles, or other rubber materials. Metal instruments and utensils are decontaminated by immersion in boiling water for 30 minutes. The only practical process for decontaminating bedding, particularly mattresses, is treatment in a steam disinfector.

When drugs and medicine containers are contaminated by liquid gases, they should be decontaminated by airing and frequent swabbing with such solvents as paraffin, gasoline, etc. The corks, unless protected by metal or other sealing material, should be destroyed.

Surgical dressings when contaminated by vaporous gases can be easily decontaminated by opening the packages and exposing the contents to clean, warm, free circulating air for an hour or two. Sterilization may be employed, if convenient. If they have been contaminated by liquid gas, any known process of decontamination is of extremely doubtful value, and destruction by burning is probably unavoidable.

All rubber supplies not injured by boiling can be decontaminated in this manner. Rubber supplies made unserviceable by boiling, such as rubber catheters, drainage tubes, etc., should be destroyed.

In England, from time to time, and as frequently as new measures of precaution against gas hazards and new precautionary methods have been tested and approved, the Minister of Health for Britain releases official circulars to govern the hospital authorities and to advise them of the most effective measures to protect their property from gas contamination and their patients and personnel from the effects of gassing.

Wise Planning Needed to Supply Urgent Demand for More Nurses

The lack of enough graduate nurses to man our civilian hospitals and to meet the calls of the Army, Navy, and Red Cross is now being urgently felt.

There is great need for an expansion of our schools of nursing. It would seem to be wiser to do this now while there is yet time to plan and start such an enlargement in an unhurried manner than to be compelled to increase the size of our schools under pressure and in haste later. This is no time for long surveys as to the extent of the need. It is no time to pay heed to the fear of nurses that their field will be crowded, when normal times return. Not now should we undertake new, five year courses and college affiliations. Physicians and surgeons must cut their internships and residencies from the present two to five years to scant one year. That has been ordained and accepted. Nurses must make sacrifices also.

Nurses and hospital directors who have to do with the planning of curricula and the development of schools of nursing must meet this emergency in a realistic way. One hospital of which

the writer knows has taken the following steps:

Advanced the date of admission of its next class from September first to July fifteenth.

Planned to admit a new class every five months instead of twice a year.

Increased the size of the class so that eventually this school will have more than 200 pupils instead of the present 135.

The principle of this hospital's plan may well be followed by others.

F. A. W.

The Lanham Bill, H.R. 4545

The Lanham Bill, H.R. 4545, has been passed by both the Senate and the House, the Senate incorporating several amendments to the original Bill, and all of these amendments were agreed to by the conference committee representing both houses. It now goes to the President.

The Bill provides for the establishment of hospitals and schools, among other public welfare activities, in zones in which large defense plants are located and in which these facilities have not been established or, if established, are not adequate to care for the needs of the increased population.

Important feaures of the Bill are:

1 That the use of the appropriation is applicable only to communities in which community life is substantially expanded by the National Defense Program;

2 The public works should be provided on the basis of need and in determining need no discrimination shall be made on account of race, creed, or color;

3 Loans or grants or both may be made to both public and private agencies for the public works described in the Bill, and equipment therefore, but the type of private agency that could qualify for such loans or grants must be a nonprofit agency;

4 The administration of the appropriation and its purposes will be under the Federal Works Administrator;

5 The law provides that the Government will not interfere with the administration or operation of any hospital or school which is the beneficiary of any loan or grant or both made under the provisions of this Bill.

Hospitals and WPA Trainees

The Works Projects Administration have a program for assigning young men and women to tax-owned and supported hospitals for the purpose of being trained to fill nonprofessional positions in hospital organizations. Voluntary hospitals are not eligible for participation in this program.

The hospital administrator may request local WPA officials to assist in preparing projects for the employment of young people on the certified lists with the hospital organization. When the projects are approved the trainees will be assigned, if available.

The purpose of the hospital service project is "to aid the hospital administrator to round out his staff to provide a more complete and adequate care of the patient, and to allow a larger intake of patients."

There are various categories of employment to which the trainee is eligible, all bearing on the welfare of the patients. The trainee is not eligible for clerical work in the business office, operation of elevators, switchboards, and other activities which the hospital would normally maintain.

Hospital administrators will, under the project, assume technical responsibility for the trainee. WPA officials will assume the responsibility for administrative supervision. Under this arrangement it is easily conceivable that the project might be inoperable. The hospital administrator, in order to serve the trainee and the project in the best way, should assume full responsibility, both technical and supervisory.

The program has some merit and presents difficulties easily discernable. The purpose of the project is laudable; its application is certainly problematical. It may well be a success in one institution, a lamentable failure in another. The trainee is benefited in the first instance, cruelly disillusioned and disappointed in the second.

In many tax-supported institutions it is well worth a trial. It will open new avenues of employment to young men and women who are at present denied the opportunity for training for a vocation. Much depends upon the administrator, a great deal upon the WPA officials, but greatest of all upon the trainee. This latter applies with less emphasis to any vocational school of educational institution.

Minutes of the Meeting of the Board of Trustees of the American Hospital Association

18 East Division Street, Chicago, Illinois, June 7, 1941

THE meeting of the Board of Trustees of the American Hospital Association was called to order at 10 a. m., Saturday, June 7, by President B. W. Black, M.D.

PRESENT:

B. W. Black, M.D.
Asa S. Bacon
Rt. Rev. Msgr. M. F. Griffin
Basil C. MacLean, M.D.
Ada Belle McCleery
Henry M. Pollock, M.D.
George D. Sheats
Ellard L. Slack
Donald C. Smelzer, M.D.
Frank J. Walter
Peter D. Ward, M.D.

Trustee Edgar C. Hayhow was absent.

VOTED: That the minutes of the meeting of February 15, 1941, be approved.

The Executive Secretary's report on the state of the Association was received. The income of the Association has been somewhat greater than it was for the same period last year and the income from the exhibit will be more than was budgeted. The institutional membership of the Association is increasing steadily and approximates 3000.

The Executive Secretary reported that there was a unanimous ballot cast in favor of the persons elected to serve on the Interim Hospital Service Plan Commission.

The Chairman of the Committee on the Award of Merit, Henry M. Pollock, M.D., reported that Frederic A. Washburn, M.D., was the unanimous choice of the Committee to receive the Award of Merit in 1941.

VOTED: That the Board of Trustees approve the selection of the Committee on Award of Merit and that Frederic A. Washburn, M.D., receive the Award of Merit in 1941.

* * *

The following resolution, adopted by the Hospital Association of New York State, was presented:

"RESOLVED: That the Board of Trustees of the Hospital Association of New York State do hereby petition the American Hospital Association to hold the national convention of that organization at Buffalo, New York, in 1943 and that the Executive Secretary, Mr. Carl P. Wright, be instructed to advise Dr. Bert W. Caldwell, Executive Secretary of the American Hospital Association, of this action."

VOTED: That the resolution be received and the Hospital Association of New York State advised the resolution will have appropriate consideration when the time and place for holding the 1943 convention will be determined.

* * *

A request from Mrs. Ronald B. Balcom, executive chairman of the Medical and Surgical Supply Committee, New York City, for contributions of funds or equipment to aid the hospitals of Great Britain and her Allies was presented.

VOTED: That the Board of Trustees approves the movement to contribute funds and equipment to the hospitals of Great Britain and her Allies and to assist wherever possible, and that the magazine *HOSPITALS* carry a notice to this effect; further, that the American Hospital Association make a cash contribution of $250.00 to this cause.

* * *

Lucius R. Wilson, M.D., of the Executive Committee of the American College of Hospital Administrators, brought a message from the College that their convocation on Sunday, September 14, 1941, will be concluded by 4 p. m. The House of Delegates of the American Hospital Association will meet at this hour to receive the reports of the council chairmen, consider new business, and transact any other business which should come before it. The agenda will include a notation that an opportunity to present new business will be given at the Sunday meeting.

The Executive Secretary presented a request from E. E. King, Executive Secretary of the Missouri Hospital Association, that the City institutions of St. Louis be granted a group member-

ship. After discussion, it was agreed that the letter be referred to the Membership Committee, with the suggestion that the Chairman of that Committee, Asa S. Bacon, report back to the Board of Trustees.

In line with action taken by the Board at its last meeting, the Executive Secretary submitted the names of the following persons who have retired from active duty and who have been members of the Association in good standing for twenty years or more, or who have retired because of illness: Edith Atkin, Grace B. Beattie, Cyril Benson, Celia Brian, Annette B. Cowles, Louis J. Frank, Emil Greenberg, May S. Holmes, M.D.; Joseph B. Howland, M.D.; Mary A. Land, Mrs. W. E. Neuenschwander, Reuben O'Brien, John M. Peters, M.D.; Stella Shipley, Henry G. Yearick, and E. Muriel Anscombe.

VOTED: That those whose names were submitted by the Executive Secretary be granted Honorary Life membership, and that Drs. John M. Peters and Joseph B. Howland, both of whom are Past Presidents of the American Hospital Association, be granted Life membership, in appreciation of their service to the Association.

* * *

The Executive Secretary called the attention of the Board to *Bill S.* 1593, introduced by Senator McCarran of Nevada, to exempt from taxation certain hospital property situated in the District of Columbia. The significance of the bill is that it would establish by law the exemption of voluntary hospitals in the District of Columbia from taxation.

The Executive Secretary conveyed to the Board a letter from Senator James E. Murray, dated June 5, 1941, regarding the status of *Bill S.* 783.

The Executive Secretary asked the Board for authorization to furnish the Board Room with new directors' chairs and this was granted without objection.

* * *

The following resolution of the Committee on Coordination of Activities was presented to the Board of Trustees with a request that it be approved:

"WHEREAS, The American Dietetic Association has worked consistently for a number of years to develop standards of education and experience for hospital dietitians with a view to improving and maintaining quality of service, and

"WHEREAS, These standards include: (a) a college degree with a major in dietetics and institution management, plus (b) one year of postgraduate training in a hospital offering a course for such training and which is approved by the American Dietetic Association, therefore, be it

"RESOLVED, That the American Hospital Association endorse these standards as established by the American Dietetic Association and recommend that whenever possible hospitals conform to these standards."

The Board of Trustees amended the third paragraph to read as follows:

"RESOLVED, That the American Hospital Association endorse the *specific* standards *mentioned above, (a) and (b)*, as established by the American Dietetic Association and recommend that whenever possible hospitals conform to these standards."

VOTED: That the resolution as amended be referred to the Committee on Resolutions to be presented to the House of Delegates.

* * *

VOTED: That the following resolutions presented by the Committee on Coordination of Activities be approved:

"That the Board of Trustees authorize the appointment of Mr. Joseph G. Norby as chairman of a Committee on Pharmacy Practice and Formulary under the Council on Professional Practice for the purpose of developing a manual on this subject."

"That the Board of Trustees authorize the representation of the American Hospital Association on a new joint committee of the American Nurses Association, the National League of Nursing Education, the American College of Surgeons, the American Medical Association, and the American Hospital Association, for the purpose of revising the Manual on the Essentials of Good Hospital Nursing Service, and that the appointment of N. W. Faxon, M.D., as chairman of this joint committee be approved."

"That the Board of Trustees authorize the appointment of a Committee on Inclusive Rates under the Council on Administrative Practice and that it approve the appointment of the following persons as members of this Committee: Maurice H. Rees, M.D., Chairman; James V. Class, Ada Belle McCleery, John R. Mannix, O. K. Fike, F. W. Altvater, Fred G. Carter, M.D., Alden B. Mills, and Helen Robinson."

"That the Board of Trustees authorize the appointment of a committee under the Council on Hospital Planning and Plant Operation to work out a program and prospectus with regard to anesthetic gas explosions with the idea in mind that eventually a program can be decided upon that will interest founda-

tions, organizations and firms for the procurement of funds to make the proper study."

" 'That the Board of Trustees consider the desirability of a promotional program at least once a year for the purpose of effecting greater sales of the technical bulletins of the Association."

"That the Board of Trustees authorize the continuation of the Committee on Simplification and Standardization for the purpose of periodic revision of the Manual on Specifications."

"That the Board of Trustees authorize the appointment of the following persons as members of the Committee on Physical Defense of Hospitals under the Council on Hospital Planning and Plant Operation: A. J. Hockett, M.D., Chairman; Anthony J. J. Rourke, M.D., and Oliver G. Pratt, and W. P. Morrill, M.D., as an advisory member."

* * *

The following resolution of the Committee on Coordination of Activities was presented to the Board:

"That the Board of Trustees be asked to approve the following resolution to be sent to James A. Crabtree, M.D., Executive Secretary, Health and Medical Committee, Federal Security Agency, Washington, D. C., and copies of which are to be sent to Hon. Paul V. McNutt, Mr. Charles Taft, and Miss Mary Switzer of the Federal Security Agency, and for information purposes to Drs. Winford Smith, Nathaniel W. Faxon, Malcolm T. MacEachern, and Claude W. Munger, and Rev. Alphonse M. Schwitalla, S.J.:

" 'WHEREAS, The American Hospital Association is deeply interested in securing the maximum of cooperation by the civil hospitals of the United States with the National Defense Program, and

" 'WHEREAS, The American Hospital Association is the logical agency for promoting the realization for the Defense Program of the cooperation which it needs and must have from the civil hospitals, and

" 'WHEREAS, The civil hospitals are capable of acting in a unified manner and of speaking for themselves, through the American Hospital Association, and

" 'WHEREAS, A Subcommittee on Hospitals of the Health and Medical Committee of the Federal Security Agency exists and is believed to have made important recommendations to the Health and Medical Committee concerning hospital preparedness plans and measures, which are completely unknown to the hospital field, and

" 'WHEREAS, Judicious releases to the hospital field of the recommendations of the Subcommittee on Hospitals which would help the civil hospitals to cooperate effectively and intelligently with the Defense Program are believed to be very desirable, but thus far have been unobtainable, therefore, be it

" 'RESOLVED, That the American Hospital Association hereby urgently requests the Health and Medical Committee and its parent body, the Federal Security Agency, to see to it that there are prompt releases to the American Hospital Association and to the recognized hospital journals, of information relating to the recommendations of the Subcommittee on Hospitals whose content is not confidential defense information.' "

VOTED: That the resolution be adopted.

* * *

VOTED: That the following resolutions, presented by the Committee on Coordination of Activities, be approved:

"That the Board of Trustees endorses the recommendation that male graduate nurses be given the same status in the army as female graduate nurses and that it communicate this resolution to the Surgeon Generals of the Army, Navy, and Public Health Service."

"That the Board of Trustees approve the recommendation of the Council on Public Education that a sum not to exceed $500 from the budget of the Council on Public Education be made available for promoting publicity in connection with the American Hospital Association convention in Atlantic City this fall."

"That the Board of Trustees, in cooperation with the Hospital Service Plan Commission, be asked to arrange for a committee for the purpose of developing a plan for a centralized, jointly operated department of public education."

"That the Board of Trustees be advised of the recommendation of the Coordinating Committee that the amendment of Article VII, Section 6, of the By-Laws, by insertion of the words 'and the Hospital Service Plan Commission' after the words 'the members of the Councils' in the third sentence, be allowed to remain without further qualification."

* * *

The Board of Trustees were advised the Coordinating Committee had approved the following resolution, which was forwarded to the Board for consideration:

"WHEREAS, The hospitals of America ren-

der a community service to the American people and to the residents of their respective areas, and

"WHEREAS, The American Hospital Association has established standards and administers a program of annual approval for Hospital Service Plans, which program is intended to protect the interests of the subscribers and member hospitals, and

"WHEREAS, Approved Hospital Service Plans, through emphasis upon the principle of self-help, tend to stabilize hospital income and to preserve the voluntary hospital system, and

"WHEREAS, The benefits available to the subscribers of approved Hospital Service Plans are clearly described in a Directory published and distributed by the Hospital Service Plan Commission of the American Hospital Association, be it

"RESOLVED, That the membership of the American Hospital Association will serve the public interests and improve the service to subscribers:

"1 If all hospitals will recognize paid-up memberships in approved Hospital Service Plans generally as the basis for extending credit for services to subscribers of approved Plans, in accord with their various subscription agreements.

"2 If hospitals will, wherever possible, look to their respective local Plans for verification of membership and authorization for services to subscribers of other approved Plans, in accordance with the respective subscription agreements."

VOTED: That this resolution be referred to the Committee on Resolutions to be referred to the House of Delegates.

* * *

VOTED: That the following resolution of the Coordinating Committee be approved:

"That the Board of Trustees be advised of the desirability of scheduling meetings at the Mid-Year Conference in order that the members of the Coordinating Committee and the Board of Trustees will be able to attend at least one session of the Presidents' and Secretaries' Conference."

The set of principles set forth in the "Status and Problem of the Hospital Staff Nurse," as revised and approved by the Council on Professional Practice, was presented to the Board. The Board of Trustees discussed the question of emergency employment of nurses not registered at the time of their employment for many reasons, among them that under the laws of some states nurses from other states or outside of the United States could not be registered until a definite length of time had expired, and for other reasons reviewed by the Board. It was recognized that under emergency conditions it might be impossible for hospitals to observe the restriction outlined in the principles that they "employ only graduate registered nurses for general staff nursing." With this understanding, it was

VOTED: That the Board of Trustees approve the revised set of principles as set forth in the "Status and Problem of the Hospital Staff Nurse".

* * *

President Black presented a request from Miss Stella Goostray, President of the National League of Nursing Education, and the members of its Board of Directors who were present at the joint conference on June 6 "that the Board of Trustees of the American Hospital Association appoint a committee of four to work with a committee of equal number from the National League of Nursing Education to consider representation of the American Hospital Association on a policy-making group of the Accrediting Committee."

VOTED: That the Board of Trustees acknowledge the request of June 6 from the National League of Nursing Education and that President Black appoint a committee of four to work with the committee of equal number of the National League of Nursing Education to arrange representation of the American Hospital Association on the policy making committee for the Accrediting project. Further, that the American Hospital Association committee be instructed to report to the Board of Trustees of the American Hospital Association.

* * *

A preliminary draft of the "Code of Hospital Ethics" was presented by the Committee on the Code of Ethics with the request that the Board familiarize themselves with it and make such suggestions as they would like before the final draft is made and presented at the next meeting of the Trustees.

The resolutions adopted by the Minnesota Hospital Association and signed by twenty active members of the American Hospital Association, suggesting the consideration of certain amendments to the By-Laws, were discussed by the Board and referred to the Committee on By-Laws.

Arthur C. Bachmeyer, M.D., appeared before the Board to discuss the proposed amendments which had been referred to him as Chairman of the Committee on By-Laws. Dr. Bachmeyer will

consult with the attorneys for the Association to ascertain if all the proposed amendments are in harmony with the laws of the State of Illinois.

The matter of retirement provisions for employees of the headquarters staff of the Association was discussed.

VOTED: That the President appoint a committee of three to investigate the matter of a retirement plan for Association employees and report back to the Board of Trustees at an early date.

Doctor Black appointed the following as members of this committee: Basil C. MacLean, M.D., Chairman; Asa S. Bacon and Bert W. Caldwell, M.D.

* * *

The next meeting of the Board of Trustees will be held on Sunday, September 14, 1941, in Atlantic City, New Jersey.

The meeting was adjourned at 2:30 p. m.

Respectfully submitted,

BERT W. CALDWELL, M.D.,
Executive Secretary.

Universities Confer Honorary Degrees on Hospital Administrators

Boston University, Boston, Massachusetts, conferred the degree of Doctor of Science on Dr. Henry M. Pollock, superintendent of the Massachusetts Memorial Hospitals, Boston, on June 9.

Iowa State College, Ames, Iowa, conferred the degree of Doctor of Laws on Robert E. Neff, administrator of the State University of Iowa Hospitals, Iowa City, Iowa, on June 8.

University of Pittsburgh, Pittsburgh, Pennsylvania, conferred the degree of Doctor of Social Science on Jessie J. Turnbull, superintendent of the Elizabeth Steel Magee Hospital, Pittsburgh, Pennsylvania.

Telephone Service for Hospitals in War Disasters

The interruption of the telephone service of hospitals, due to exploding bombs or other causes, should not be of long duration and can be easily remedied.

The large telephone companies have advised that in the event of such interruption, prompt measures will be taken to transport portable equipment and repair supplies to take care of the emergency. Lines from points distant from the hospital—two to three blocks—will be connected and laid to the hospital switchboard, and in the event that this is damaged emergency apparatus will be installed so that a reduced service will be available within a few moments and until permanent repairs have been made that will insure full telephone service to the institutions.

In a recent conference with the representatives of the telephone companies at Association headquarters it was suggested that the hospitals which have organized catastrophe units could furnish the telephone companies with a list of physicians, nurses, and other members of the hospital staff living outside of the hospital, together with their telephone numbers, so that in the event that a catastrophe does occur within the area assigned to the hospital and to its catastrophe unit, the telephone company can immediately call from its central station and instruct the persons listed to report to the scene of the catastrophe for duty. This will enable members of the catastrophe unit to receive the information and instructions direct and without the message being relayed from the hospital telephone board through central to the individual telephones.

The representatives of the telephone companies thought this was a practical suggestion and expressed the opinion that the telephone companies would undertake to perform this service.

Latin-American Relations

The interest of the hospital field of Latin America in American hospitals has reached a high peak. Practically every country in Central and South America has sent representatives to the United States to study hospital organization and association developments.

A group of fifteen hospital and public welfare representatives of South American Republics were the guests of the Catholic Hospital Association in Philadelphia.

The Latin-American Relations Committee of the American Hospital Association, of which Dr. Malcolm T. MacEachern is chairman, is formulating plans to call the hospital representatives of the governments of Central and South America to the Atlantic City Convention in September for the purpose of discussing problems of mutual interest and laying the foundation work for the organization of a "Hospital Congress of the Americas." The invitations to the respective governments will go forward with the approval of our own State Department.

The Latin-American Republics are sending inquiries to the Association headquarters, asking that itineraries for their individual representatives be arranged for visitation to different hospitals in the United States. This has been done in the instances of Mexico, Argentina, Chile and Panama.

These cordial relations should be permanently established and maintained.

Protecting Hospitals Against War Hazards

THE important and practical measures which can be promptly taken to protect our hospitals as much as is humanly possible against the hazards of bombing and other accidents have been carefully studied by the American Hospital Association, and all possible information that could be secured from authentic sources has been assembled.

The following questions and answers cover a part of the assembled information, and this series will be continued in future issues of *HOSPITALS*.

As a preliminary preventive measure, it is most important that each hospital provide itself with a map of the institution showing the location of water mains, sewerage disposal lines, electric current conduits, gas and oil lines, all main stop valves, sewerage back-pressure valves and transformers with which these various services are equipped.

All valves and fittings which control the main distribution lines of water, gas, oil and steam supply should be located and painted, a different color being used for each of these services, preferably in conformity with the code of the American Society of Mechanical Engineers. By identifying these valves and connections in this manner the valves can be quickly located and the area affected by damage can be promptly cut off.

Question 1—What measures should be taken to protect patients from shattered glass due to bomb explosions?

Answer. Paste gummed tape on glass to decrease the number of flying fragments or paste muslin on the inside, using the same dimension as the window glass. Hang heavy curtains or drapes inside to cover the window frame.

Question 2—What procedure is most practical for "blacking out" within the hospital?

Answer. Hang heavy curtains in front of the windows and other light openings and overlapping the openings by at least 6 inches on sides, tops, and bottoms.

Question 3—What provision should be made for light during the period of the black out?

Answer. Use blue bulbs in the regular fixtures which can be supplemented by hand flash lights.

Question 4—What practical measures are advisable to protect the hospital water supply in the event that the water lines are broken by bombing or from other causes?

Answer. Provide connections for alternate water service from a main as far distant from the regular main as is practicable. Use wells dug or driven on the hospital grounds and emergency storage tanks located high enough to afford sufficient water pressure.

Question 5—What practical measures can be taken to protect the electric service within the hospital?

Answer. (a) Establish one or more alternate service lines from feeder cables located as far distant as possible from the cables that furnish the usual electric supply. (b) Use storage batteries for individual units of the hospital such as the operating room and for corridor lights and exit lights only. (c) Install a diesel generator set located above ground level to avoid its being put out of commission by the flooding of the basement or from other causes.

Question 6—How would you protect against sewer breaks?

Answer. (a) By constructing a sewer pit either in the basement of the institution or at a convenient low place outside of the building and connecting an electric driven pump placed above ground level and connected so as to discharge into an outside location where the sewage can be safely disposed of. (b) By installing trap valves in the main sewage pipe lines to prevent backing up in case of damaging of the lines outside the hospital.

Question 7—How can you protect against fire from illuminating gases?

Answer. Install shut off valves at the street connection and close promptly when air raid warnings are sounded.

Question 8—How can the heating plant be protected?

Answer. When the boiler room is protected from flooding and sewage back up and the water supply is properly protected and (in the case of electrically driven stokers or oil burners) the electric supply is properly safe-guarded, the power plant will be amply protected except in case of direct hit by high explosive bombs. In case of the power plant being directly hit by the high explosive bomb, the obstruction will put the plant

out of commission regardless of any practicable measures for power plant protection.

Question 9—What good protection can be afforded against incendiary bombs?

Answer. Incendiary bombs are of two varieties. Small magnesium bombs weighing about 2 pounds and large ones carrying from 40 to 50 gallons of crank case or similar oil. The small incendiary bombs are quite easily extinguished by covering the roof or exposed parts with sand or by the use of the small stirrup pump and buckets of water, or by the use of the ordinary soda acid extinguisher. A layer of 2 or 3 inches of sand on a flat roof will be a good practical protection but due care should be given that the down spouts leading from the roof are not being stopped up with the sand. The large bombs might break through a roof but will almost certainly be stopped by the first or second concrete floor they encounter. If this floor has any combustible material located on it a serious fire must be expected and provided against.

Question 10—What protection against explosive bombs may be installed?

Answer. The smaller bombs, less than 500 pounds, are generally used in residential areas and in areas of smaller buildings. The large bombs are of two varieties—the land mines, usually from 1000 to 2000 pounds, and the high explosive, delayed action bombs weighing from 500 to 1000 pounds. The land mines are dropped attached to parachutes and land at such low speed that generally they do not penetrate the ground but explode on contact. Their destructive force is exerted over a rather large area and consist of a killing concussion followed by suction which may cause buildings to explode outward. There is little that can be done to existing buildings to protect them from the land mines. The high explosive delayed action bombs are dropped from great heights and either penetrate the ground for several feet or will go through 3 or 4 floors of concrete. They are fitted with delayed action fuses which explode them from 2/5 of the second to 7 days after landing. These bombs usually descend at an angle and are as liable to hit the wall as to hit the roof. There is little that can be done to protect against the highly explosive bombs except to take advantage of the delayed action feature and evacuate the area of the building as rapidly as possible.

Question 11—What types of casualties may be expected from air raids?

Answer. The total number of casualties are not as great as might be expected as air raids generally occur during the late hours of the night. With a good system of air raid warnings, the majority of people are enabled to protect themselves in the air raid shelters which are comparatively safe from all but direct hits. Of the casualties that do occur, 1000 casualties average 300 killed, 100 walking wounded and 600 seriously wounded. Since the wounds are largely resulting from explosion fragments and collapse of buildings, a large proportion are fractures, exterior lacerations and embedded foreign bodies.

Question 12—Are underground operating rooms for emergency work advisable?

Answer. The British experience indicates that 2 or 3 floors of concrete above the operating room are preferable to underground construction. An added protection is afforded by covering the floors with one or two feet of sand, removing all combustible material and in the case of new construction, the omission of outside walls of the two upper floors affords added protection against concussion and suction effects.

Underground operating rooms are so dependent upon the complicated air conditioning, lighting and gas protection that they are very vulnerable. The first described location for operating rooms is preferable.

Question 13—What protection can be afforded against gas attack?

Answer. So far the use of noxious gas has not been employed by any of the combatants. But it is altogether within the picture that gas may be used at some future period. These gases are heavier than air and cling to the ground after they are released. Under usual conditions protection against poisonous gases would be needed for the basements and first and second stories only. If air conditioning or mechanical ventilation systems are in use the air inlet to the system should be protected by extending a stack up to the point above the surrounding roof levels or by the installation of an extensive gas filter.

Question 14—In case of gas attack what protection against the introduction of gas on the clothing and person of the patients and personnel should be afforded?

Answer. In the event of a gas attack nearly all patients will have been degassed before being brought to the hospital. Degassing consists of stripping the patient and giving them a shower. The clothing should be thoroughly washed before using again. The attendants at the degassing station must themselves be protected by masks, gloves and gas proof clothing, according to the type of gas being used and should work for a short period not over 2 hours at the end of which they should themselves be degassed and given an adequate rest period.

A Remodeled Operating Room and Nursery Plan

FRANKLIN B. McCARTY, M.D.

ANY plan for modernization of hosiptal facilities involves a consideration of accessibility, safety, and convenience. No design can be evolved which will remain permanently modern, and the best one can hope for is a simple and efficient layout which will lend itself to future expansion or change.

One of the most grievous errors in the older operating suites was the tremendous waste of space with the resultant loss of time, motion, and energy. It is an old axiom of surgical practice that, other things being equal, a surgeon does his best work when he and his staff are comfortable. The department, obviously, should provide an arrangement which will permit physical comfort for the operating crew and will reduce to a minimum all factors which retard or hamper the speed and safety of operative procedure.

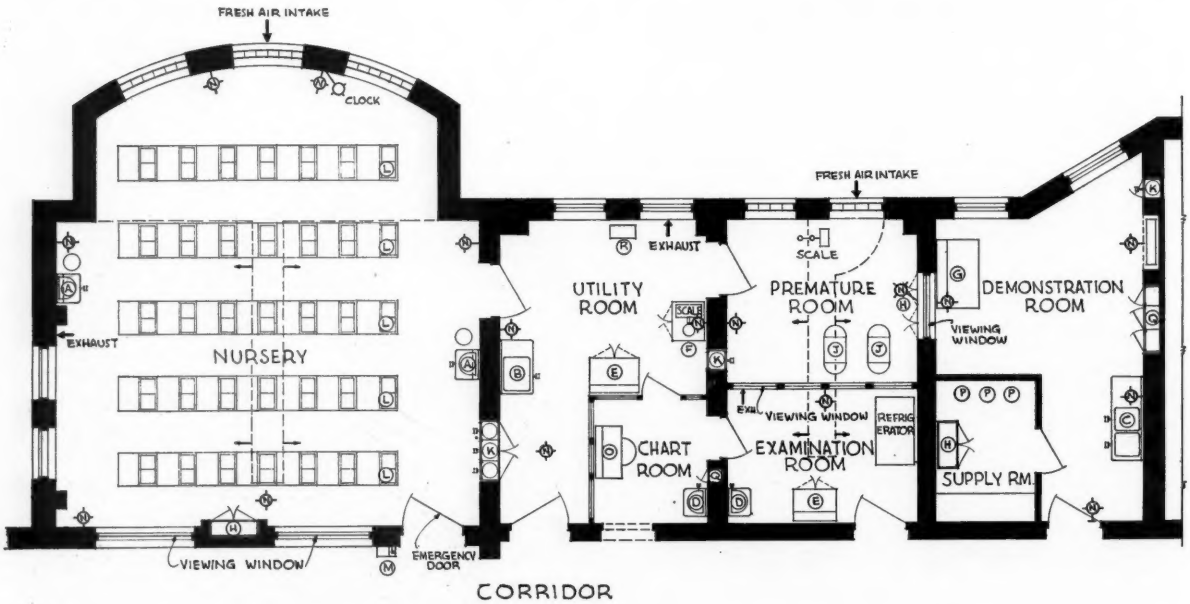
Presented at the Tri-State Hospital Assembly, Chicago, Illinois, May 1941.

The Author

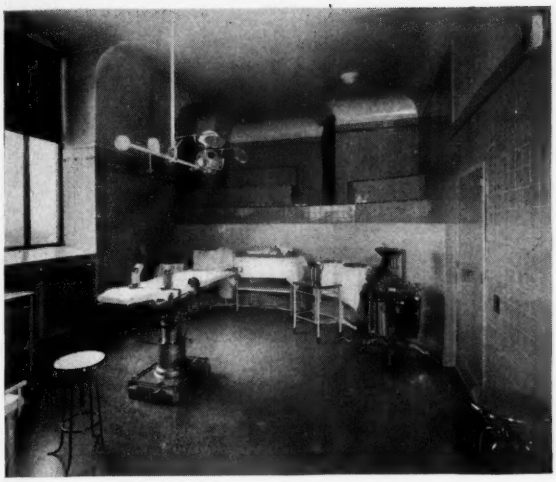
● Dr. Franklin B. McCarty is Attending-Surgeon at St. Joseph Hospital, Chicago, Illinois.

The Operating Suite Twenty-seven Years Ago

The operating suite at St. Joseph Hospital, Chicago, was modern and well designed when it was built in 1914. It served satisfactorily for many years until time began to take its toll due to the introduction of new methods and appliances. The original design was fortunate in many respects. The operating rooms were laid out on either side of a wide corridor 185 feet long, on the top floor of the north wing of a new and completely fireproof building. At the north end of the suite an



(A) Lavatory with footvalve; (B) Surgeons' sink with footvalve; (C) Double sink with footvalve; (D) Lavatory with elbow-valve; (E) Dressing table and cupboard; (F) Cupboard; (G) Dressing table; (H) Cabinet; (J) Incubator; (K) Soiled diaper hamper, foot-operated; (L) Bassinet units; (M) Speaking device; (N) Ultraviolet lights; (O) Stainless steel desk; (P) Oxygen container; (Q) Locker; (R) Instrument sterilizer



Major Operating Room

elevator was used exclusively for the transfer of patients while a second elevator at the south end provided for general use. The department occupied the entire wing and was completely closed off from the rest of the hospital.

At the south end of the suite were operating, anesthesia, supply and sterilizing rooms for the otolaryngological department. At the north end were separate fracture, instrument, supply and sterilizing rooms for the department of general surgery. Between the two, on the west side of the building were the doctors' dressing rooms with lockers and showers and on the east side were surgical anesthesia rooms and nurses' locker room. On either side of the corridor were the major operating rooms, four in all, and built in pairs with scrub-up rooms between each two rooms. Each of the latter contained four deep-type scrub-up sinks with foot controlled pedals. Two of the operating rooms had built-in amphitheatres which could be entered only through separate stairways from the outer hall.

The walls were all of plaster, windows were large and fitted with double reinforced plate glass, and ventilation was provided through screened intake and outlet vents. The ceilings were high and above each operating table was a large plate glass insert over which were mounted high powered operating lights with holophane reflectors. These were the finest that could be bought at the time. They were attractive and threw a shadowless light but were utterly inadequate as a source of illumination. It was like parting with a family heirloom to dispose of those fixtures. Getting rid of similar costly equipment which is usable but outmoded presents one of the major hurdles in any program of rehabilitation. The floors were of mosaic type and, by a stroke of good fortune, were laid with cloisonné construction throughout, thus greatly simplifying the grounding of apparatus when gaseous anesthetics came into use. The junctions of walls with floors and ceilings, as well as all corners of walls were rounded. In the outside corridor was the supervisor's desk and cabinets to hold clerical supplies and gowns for visiting doctors.

Correcting Factors Long Out-moded

In approaching the problem of remodeling, an attempt was made to acquire modern efficiency with as little disturbance as possible to the existing set-up. Consideration of the matter revealed the following facts:

The plaster walls of the operating suite were in need of constant attention. This was annoying, unsightly and, in the long run, expensive.

Lighting was inadequate because of the great distance from the operative field.

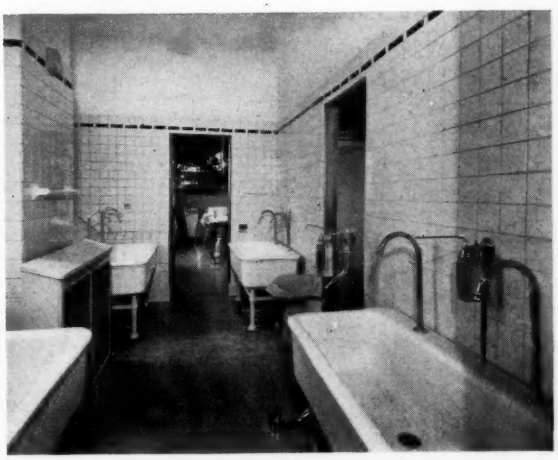
The use of the halls for desks or storage cabinets caused congestion in the corridor.

The examination room for the urological department, then on another floor, was inconveniently located. Because of the many procedures requiring aseptic technic and additional scrubbed assistants that department could well use space adjacent to the operating rooms.

Sterilizer equipment was inaccessible and permitted the escape of live steam into the room.

The introduction of the new types of gas anesthetics called for a survey of the steps necessary to reduce the hazards of explosion.

The correction of these factors was not particularly difficult. The walls were covered to a height of nine feet with steel tiling of a restful green shade in the operating rooms and a soft tan

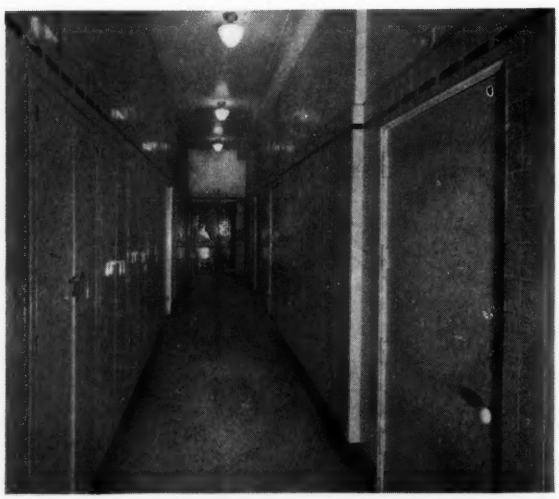


Scrub-Up Room, Surgical Department

Delivery Room

color in the corridor and supply rooms. Steel tiling has proven eminently satisfactory. It stands hard usage without cracking or chipping, and when a tile is accidentally dented or marred can be quickly and inexpensively replaced. The holophane lights and glass in the operating room ceilings were removed and the ceilings made solid. New non-heating operating light fixtures were suspended above each operating table and supplementary pedestal lights for localizing the operative field were purchased. These were of a type which could be used in the event of failure of the commercial current.

The corridor was cleared of desks, chairs, and cabinets and locker space for storage of gowns as well as shelves for records and telephone was provided by recessed cabinets. Out-dated operating tables were replaced with those of latest design. All white enamel ware, utility tables and stools were replaced with monel metal equipment and built-in containers provided for the disposal of soiled linen. A small hot-room furnished means of keeping blankets, gowns, and solutions warm at all times. Automatic soap solution dispensers and alcohol sprays were placed in the scrub-up rooms. The plaster room was rebuilt with inset plaster and splint cabinets and a set-in x-ray illuminator. This room was already equipped with a very satisfactory type of fracture table which has recently been improved by the addition of attached x-ray apparatus designed by a member of the hospital staff. It is now possible to take x-rays in the operating room during open operation for the reduction of fracture without any break in the aseptic procedure.



Corridor, Delivery Room Suite

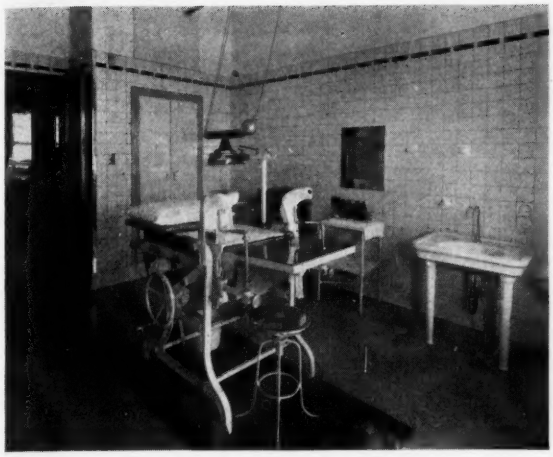
Because of the common use of gas and local anesthetics the induction of anesthesia is now begun in the operating room itself and there is no longer need of separate anesthesia rooms in the general surgical section. This change in procedure permitted the use of one of these rooms as an office for the surgical supervisor and the transfer of the urological examination room to this floor. A urological x-ray examination table was added so that pyelograms could be made without transferring the patient from the table.

Re-arranging the Sterilizing Equipment

The sterilizing room contained equipment which was of adequate capacity and met all the requirements of safe sterilization. The sterilizers were, however, all of the exposed type with steam issuing from just about every piece of apparatus. A check of the room on average day revealed that the nurses were working in a temperature of 108 F. One new sterilizer was purchased and the entire battery recessed behind the walls. This vastly improved the appearance of the room, added more space and reduced the temperature to that of the rest of the operating suite. To each of the sterilizers was attached a control unit so that the inside temperature was automatically maintained for a specified length of time. If the temperature falls below specification the time regulator stops and does not start again until the proper level is reached. It is now certain that material to be sterilized has been kept at the correct temperature for an adequate period of time as an automatic visible stylographic record eliminates any possibility of error in respect to time or temperature. Temperature studies showed that the water in the gauges on the sterilizers was not being maintained at a degree sufficient to keep it sterile and coils were added to correct that defect.

Eliminating Separate Anesthesia Rooms

The water sterilizers for boiling instruments presented another minor problem. It seems to be



Cystoscopy Room, Surgical Department

just human nature to feel that vigorously boiling water is somehow doing more to destroy bacteria than is water which is barely boiling. Physicists assure us that this is not so, and we can safely accept the fact that whether it is simmering or boiling violently the water is at a temperature of 212° F. sea level or 211½° F. at the altitude of Chicago and is a safe sterilizing medium. The disadvantage of overactive boiling is two fold: it is evaporated more quickly, and the escaping steam condenses on the cooler walls and may drop onto sterile materials. The addition of automatic control units maintains the water at boiling temperature without too much agitation and with little escape of steam.

Protection Against Explosion Hazards

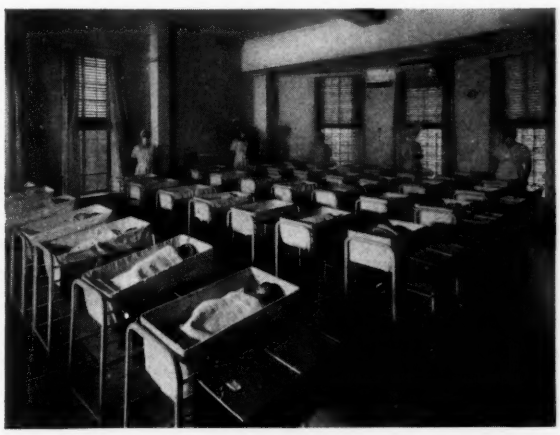
Prior to the introduction of ethylene, cyclopropane and such anesthetics the problem of explosion prevention was largely one of keeping an open flame or cautery away from the anesthetic. But with the use of such gases the situation became more complicated. Present thereafter were the elements of faulty electrical connections and of static spark. All electrical connections were overhauled and new switches which met the requirements of the National Board of Fire Underwriters were installed throughout the department. Only switches bearing such approval should be used in operating rooms today.

Grounding of the anesthetic machines was simplified by the conductive type of floor. All nonconductors, such as rubber soled shoes, mats, footstool covering and tips on the anesthetist's chair were banned. No rayon or sharkskin uniforms were worn by the operating room personnel. It is elemental that open flame and electrical sparks should be avoided when explosive gases are being used. The rule was made that the inhalation tube of the anesthesia machine must always be thoroughly wet before gas is allowed to pass through it as the simple passage of gas over the dry rubber may produce static sufficient to spark the mixture. This is a simple but important detail sometimes overlooked. It should be remembered that ethylene and cyclopropane are heavier than air and that the greatest concentrations of the gas will be about the patient's mouth and in the lower portions of the room. It is this fact that makes the dropping of metal instruments so dangerous. Some of the old time surgeons who delighted in hurling instruments about the operating room would, nowadays, be inviting a one-way trip to eternity.

A problem which faces us at the moment is the use of photo flash bulbs for clinical photography in the operating room. The bulbs are now so protected with elastic coating as not to shatter if broken but whether that would be a sufficient safeguard in the presence of highly explosive anesthetic gases is as yet a question. It has been found that the use of natural color photographs of operative procedure and of living pathological tissue in situ have added materially to the interest in the weekly pathological and clinical presentations at the hospital.

Revamping the Nursery

Coincident with the modernization program in surgery there was undertaken a revamping of the newborn infant nursery. This was done under the supervision of the head of the department of pediatrics, Dr. Archibald Hoyne. Doctor Hoyne's long experience as an epidemiologist is reflected in the effective control of intercurrent infection in the newly designed nursery. The department originally consisted of a large southeast room, one corner of which was partitioned with glass as an examining and bathing room. Glass partitions near the entrance walled off a space which



Air-Conditioned Nursery

was used as robing quarters for the attending pediatricians. In the main body of the room were individual cribs and incubators. Across an open corridor was a chart and feeding supply room. This arrangement had several disadvantages, chief of which was the necessity for the nurses to cross the open hall. With the addition of three adjacent private rooms the present arrangement was evolved. The windows of the main nursery were closed with glass vacuum sealed blocks which replaced the single glazed windows. Observation windows with stainless steel frames were placed in the corridor wall of this room and a speaker device permits persons in the corridor to talk to the nurses without entering the nursery. It is impossible to enter the main nursery from the hospital corridor, although a door is so placed that it could be used as an emergency exit.

The Air Conditioning Unit

A large air conditioning unit was designed to provide air filtering, controlled temperature and humidity, and air flow. Ultraviolet lights are so placed as to sterilize the incoming air which is at all times brought in from the outside without re-circulation. Controls on the system are so arranged that heating, cooling and humidification may be regulated individually. Illumination is by fluorescent lamps.

The 35 cribs are of stainless steel and to each is attached a box of similar material to hold the individual articles used for the care of the baby. The adjacent utility room permits access by the nurse to the outside corridor, but the attending pediatrician may enter the unit only through the chart room. The premature room is equipped with incubators and an oxygen supply system which is piped from a nearby room where the tanks are stored. To each of the four oxygen outlets is attached the necessary valve controls and supplementary individual oxygen units are accessible to each incubator. Feedings are prepared

Examination Room, with Premature Room in distance

in the diet kitchen and are stored in an electric refrigerator. The demonstration and supply rooms have no direct connection with the rest of the suite although there is a large viewing window in the wall. This room may be entered only from the outside corridor and is used for giving instructions to mothers who are about to leave the hospital with their babies. The isolation quarters are located at a considerable distance from the nursery. It is interesting to note that control of aseptic technic has resulted in the total absence of impetigo in the nursery over a period of 12 years.

Modernization seems to be a never ending job, for no sooner has one part been completed than another demands attention. I would suggest to any of you who are undertaking such a program that you photograph the old quarters and your sense of gratification at the result will be immeasurably increased.

Extractor Operation

Proper operation of the extractor can make or break the work of the ironer. Goods requiring a high finish, such as table cloths, should retain about sixty per cent of their dry weight of water to permit the best finish. Goods requiring a soft absorbent finish, such as towels, should not retain more than thirty-five per cent to forty per cent of water retention.

A standard make of extractor running at its rated speed will extract down to slightly less than fifty per cent retention in a fifteen minute run, the inner portion having five to nine per cent less retention than the outside. A thirty minute run does reduce the retention by five to eight per cent, and therefore does not give enough reduction to justify the added machine wear and power consumption.

Linen requiring a high finish should therefore be run somewhat less than fifteen minutes, and linen requiring a soft finish should be run fifteen minutes and then subjected to some predrying, in the tumbler, for instance, as this is a much cheaper way to remove the excess water than leaving it to be removed by the ironer.

The First Institutes on Accounting and Purchasing

Sponsored by the Council on Administrative Practice of the American Hospital Association

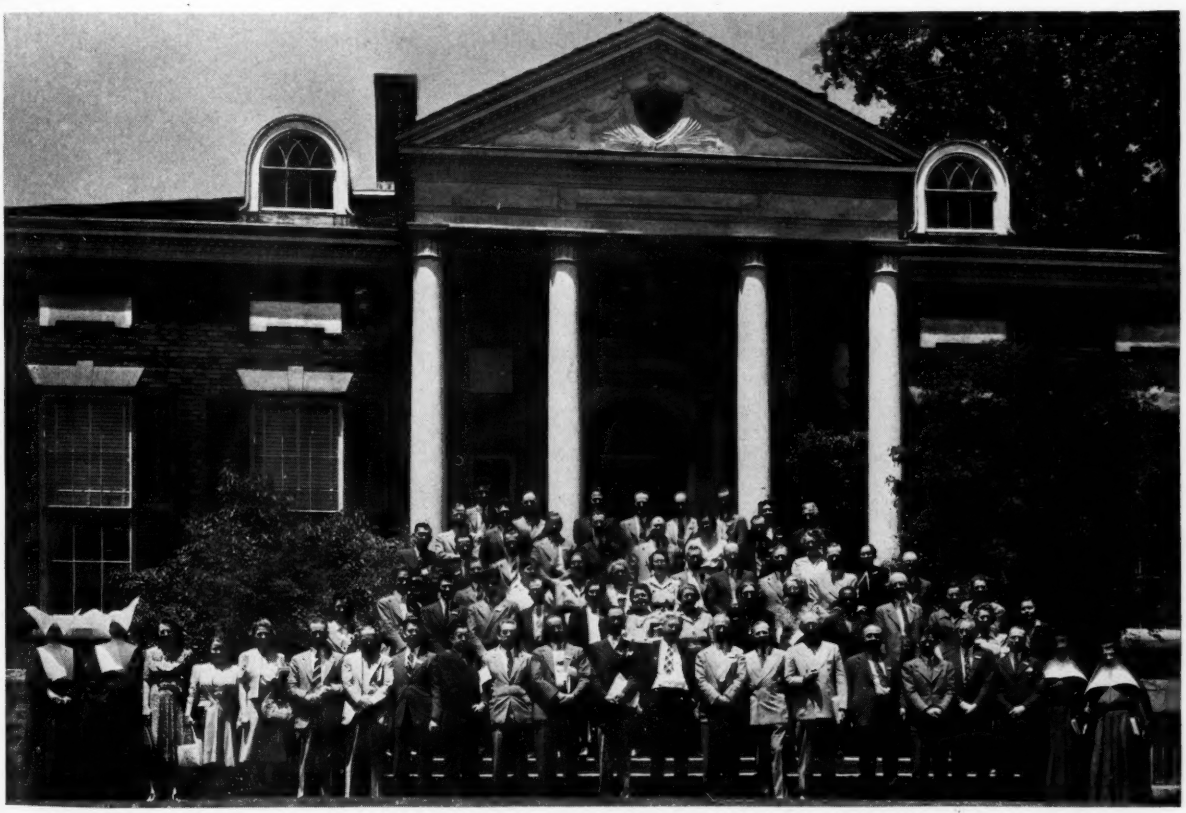
June 9 to 14, 1941

Institute on Hospital Purchasing

A VERY interested and enthusiastic group of seventy-three attended the First Institute on Hospital Purchasing held by the Committee on Purchasing of the Council on Administrative Practice of the American Hospital Association in affiliation with Johns Hopkins University and the Baltimore Hospital Conference. In the registration were included 10 administrators, 15 assistant administrators, 3 business managers, 26 purchasing agents, 2 assistant purchasing agents, and 17 department executives with purchasing responsibility. Of these, 48 had complete or practically complete responsibility for all purchasing in their respective hospitals.

The fundamentals of correct purchasing procedures were fully covered in the program, as forms and records, standardization and specifications, quantities to purchase and quotation procedures, receipt and inspection, stores and inventory control, discounts issuance, and cooperative purchasing. Seminar discussions followed the presentation of each subject.

Much discussion and the keenest interest was devoted to present day purchasing policies and current price trends. The conclusions of the group were that this is definitely a seller's market and the purchaser is at a disadvantage. It was antici-



This picture was taken on the steps of "Homewood" built by Charles Carroll, signer of the Declaration of Independence, for his son Charles, Jr. This is considered to be one of the finest and best preserved homes of early architectural distinction and has had considerable effect upon American architecture

pated, however, that hospitals as essential health agencies would be given a priority rating next to the army and navy and the essential defense needs. However, larger inventories will have to be kept on hand to insure against delays in delivery and the scarcity of many commodities. It was considered that in almost all commodities a six month inventory was indicated.

Increased transportation difficulties were anticipated, particularly from west to east and the reverse, due to the decrease in shipping facilities for transportation by water. The necessity for rail transportation to take its place would result in an unavoidable increase in prices of commodities, because of the higher expense of rail transportation. Optimism was expressed, however, in that the Federal Government would not permit prices to get out of control, as occurred in the World War I, and that increases in the price of commodities would have to be justified. Hospitals were urged to store all coal possible for the winter's use prior to October 1.

In view of the necessity for American manufactures to undertake the manufacture of surgical instruments to take the place of those of foreign make, it was considered a most opportune time to attempt a simplification of surgical instruments. To promote this endeavor a subcommittee of the Committee on Purchasing was appointed to contact the Committee of the American Hospital Association on Simplification and Standardization, the American College of Surgeons, the Surgical Trades Association, the Government agencies and all other interested groups. Members of the committee appointed are Neal Johnson of Johns Hopkins Hospital, Paul Burroughs of Rochester General Hospital, and James Best of the New York Hospital, all purchasing agents of their respective hospitals. By such an early effort, it is hoped greater efficiency can be secured in this new endeavor of American industry.

The members of the Institute voted unanimously for the continuation of the Institute next year. They expressed a desire for some type of further organization of Hospital Purchasing Agents, and requested the Committee on Purchasing to give it their consideration. They also expressed a strong demand for a full time research and advisory bureau to devote its attention to standards, specifications, testing for quality, simplification and similar services of benefit to purchasing agents and hospitals in general.

Institute on Hospital Accounting

FOR many years the American Hospital Association has been interested in promoting more economical and efficient hospital management through improvement in accounting and statistical procedures, as well as development of some uniformity in the reporting of hospital statistics. In order to provide additional training in hospital accounting and opportunity for discussion of mutual problems, the first Institute on Hospital Accounting was conducted June 9 to 14 on the campus of Indiana University by the Committee on Accounting and Statistics of the Council on Administrative Practice.

The Program

The program was based on the fourth edition of "Hospital Accounting and Statistics," recently published by the American Hospital Association, and took the form of lectures and seminars, teaching sessions, and round table conferences.

Herman Wells, president of Indiana University, and Graham L. Davis, chairman of the Council on Administrative of the American Hospital Association and director of the Institute on Hospital Accounting, extended official greetings to the members of the Institute at the opening session, Monday, June 9. Stanley A. Pressler, associate director of the Institute and assistant professor of accounting, Indiana University, outlined the general instructions for the Institute.

The opening lecture, "Hospital Organization from the Accounting Standpoint," was presented by James A. Hamilton, administrator of New Haven Hospital, New Haven, Connecticut. Other phases of the subject covered by visiting lecturers were: "Admission of Patients, Credits and Collections," by Gladys Brandt, R.N., administrator of Children's Free Hospital, Louisville, Kentucky; "Accounting for Hospital Expenditures," by George P. Harris, field representative, Hospital Section, the Duke Endowment, Charlotte, North Carolina; "The Effect of the Hospital Service Plans on Hospital Accounting" by C. Rufus Rorem, Ph.D., director of the Hospital Service Plan Commission, American Hospital Association, Chicago. This paper was presented for Mr. Rorem by Robert M. Cunningham, Plan for Hospital Care, Chicago, Illinois. The lecture and teaching sessions by Stanley A. Pressler, associate director of the Institute, covered "General Principles of Hospital Accounting," "The Patient Register and Charges to Patients," "Income and Cash Receipts," and "Installation of the Accounting System." Graham L. Davis lectures dealt with the "Apportionment

of Hospital Costs" and "Receipts and Disbursement vs. Income and Expense." Each lecture was followed by a seminar at which the lecturer presided.

Round Table

The round table discussions which were scheduled for one hour in the evening after dinner were adjourned at the pleasure of the majority—and they usually ran for three hours. These conferences were conducted by Mr. Davis and Mr. Pressler, assisted by the visiting lecturers and members of the Indiana Hospital Association who presided at the different sessions.

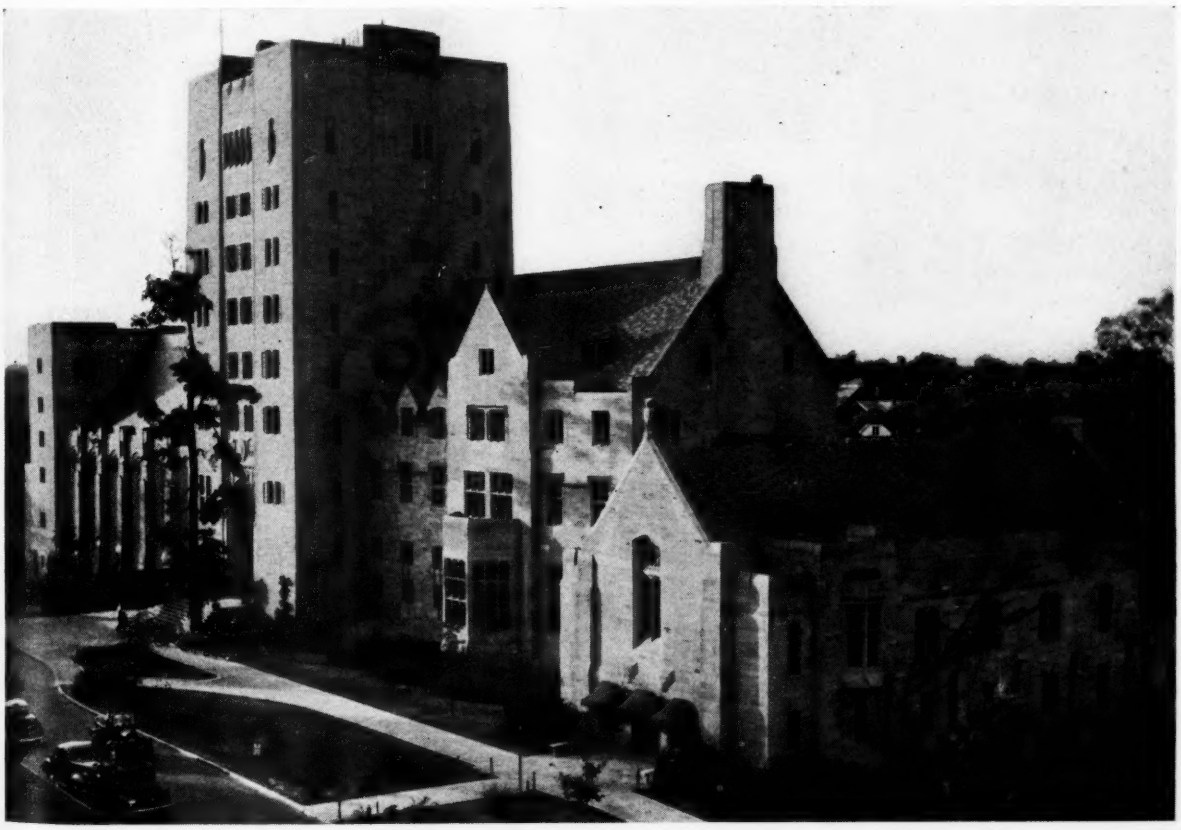
According to the report of the director of the Institute, Graham L. Davis, the reaction of the registrants to the Institute was most gratifying. More than seventy persons from 15 states and the District of Columbia attended the Institute. Although the program was designed for the smaller hospitals with a view to assisting them in adapting the uniform accounting system to their organization, many accountants, auditors, and comptrollers from large hospitals were in attendance. This group held some interesting special round table discussions on problems peculiar to large hospitals. It is believed that in the future these Institutes, although again emphasizing accounting in small hospitals, should likewise provide a place on the program for consideration of accounting problems of the large hospitals.

Reports from the registrants indicate that they not only considered the course was of real practical value to them but they felt that refresher courses of this kind should be encouraged and made available for interested persons in the hospital field.

The President of the Indiana University, the Dean of the School of Business, and the Head of the Division of Accounting showed keen interest in the Institute. The registrants found every effort was made to make their stay on the University campus as pleasant and convenient as possible.

The last evening of the Institute an informal dinner was given and was a pleasant climax to five interesting but very busy days.

As in the case of the Chicago Institute for Hospital Administrator, conducted by the American Hospital Association, an official certificate of attendance signed by the President and Executive Secretary of the Association and the Director of the Institute was presented at the last session of the Institute to each registrant who attended all the sessions.



Union Building, Indiana University, Bloomington, Indiana

Recent Legal Decisions Important to Hospitals

Whether Doctor Was Acting Within Scope of His Employment When Carelessness Caused Radium Burns

Smith v. Duke University, Supreme Court of North Carolina, May 21, 1941

These two actions brought by the husband and wife to recover damages for injuries which were alleged to have resulted from radium burns caused by the careless treatment of the wife in a hospital operated by Duke University. It was shown in the evidence that the wife had been admitted to the hospital while suffering from extensive hemorrhages consequent to childbirth and that she had gone into the hospital upon the advice of her own physician. Because of the fact that she was suffering from such hemorrhages, she was placed under the care of a doctor who was professor of Obstetrics and Gynecology in the Duke University Medical School. After an examination the doctor advised that radium treatments be applied to the wife. The husband and wife complained that the treatments were carelessly administered. The trial court entered a judgment of non-suit which was affirmed by the Supreme Court, it being held that the plaintiffs had failed to prove that the doctor in question was an employee of the University at the time when he treated the wife, and that the plaintiffs had failed to prove that he was acting within the scope of his employment by the University.

It was shown that the hospital was so operated that it did not include in its bill for services any fee charged by physicians. While the hospital employed physicians who were paid for work in the wards and dispensary, there was no arrangement by the hospital and the doctors concerning individual, private fees. Upon some occasions, at the request of the particular physician, a statement would be rendered by the hospital indicating the amount owing for medical fees. However, the hospital never assumed responsibility for the collection of the practitioner's charges.

After considering the evidence the court said:

> "In order to maintain his action against Duke University, it was incumbent upon the plaintiff to show that Doctor Carter, by whom or under whose care the alleged negligent treatment of his wife was administered, was an employee or agent of the University, and to go further and show that Doctor Carter was, at the time and in respect to the treatment complained of, acting as such within the scope of his employment . . .
>
> "It is well settled that an employer is not liable for the negligence of the employee which causes the injuries in question while the employee is acting outside the legitimate scope of his employment and is then engaged in some private matter of his own.
>
> "Evidence that Doctor Carter was employed as Professor of Obstetrics and Gynecology in the Medical School of Duke University, and that his employment included 'free ward work' in the treatment of charity patients in the hospital, and that he was a member of the professional staff of the hospital as a physician and surgeon was not alone sufficient to show that in the treatment of Mrs. Smith he was, at the time and in respect to the particular treatment given her, acting within the scope of his employment by the defendant University as distinguished from his private and individual practice for which he was paid by the patient. He was not employed by the defendant to treat pay patients in the hospital, or any others except in the free ward, and received compensation from the defendant therefor . . . Nor can the fact that Doctor Carter was furnished an office in the hospital, which he used as part compensation for teaching and for free ward work, be held sufficient to show that he was the agent of the defendant in treating the plaintiff's wife. The evidence indicates that in treating her he was exercising independent and individual professional skill and judgment . . ."
>
> "The rule may be fairly deduced from the decisions of this court that when a person goes to a hospital for treatment for a particular malady and expresses no preference as to the physician by whom he is to be treated and is there directed to or assigned to a reputable physician, one who is not in that respect an employee of the hospital and who is apparently qualified to treat such malady,

it is the duty of those in charge of the hospital to exercise reasonable care in the selection of the physician, and that without proof of negligence in this respect, no liability attaches to the hospital for injuries due to negligence or unskillful treatment of the patient by the physician . . . Ordinarily, the hospital undertakes only to furnish room, food, facilities for operation, and attendance, and is not liable for damages resulting from the negligence of a physician in the absence of evidence of agency or other facts upon which the principle of respondeat superior can be applied."

Hospital Guilty of Negligence in Failing to Furnish Safe Apparatus for Doctor's Use

Delling v. Lake View Hospital Association and Training School for Nurses, et al. Appellate Court of Illinois, First District, May 15, 1941

It was alleged that the plaintiff had been placed under the care of a doctor and the defendant hospital for the purpose of having performed an operation upon her cervix. This operation required the use of cautery and it was alleged that because of the negligent use of the cauterizing instrument by the doctor and by the hospital a certain electrical cord burned and became separated and that part of it remained in the plaintiff's abdomen. Plaintiff grounded her case upon the theory that the hospital had not used reasonable care in supplying cautery apparatus which was fit for use in such an operation. It was the theory of the hospital that it had not been guilty of negligence in furnishing the cauterizing instrument to the doctor in operating on plaintiff and that the plaintiff had not produced evidence to show that there was any defect in the apparatus. However, a judgment was entered in favor of the plaintiff against the defendant hospital and this judgment was affirmed on the appeal, it being the decision of the court that there was sufficient evidence before the jury from which the jury could reasonably find that the hospital was guilty of negligence in failing to furnish a fit and safe apparatus to the doctor who performed the cautery. A directed verdict was entered in favor of the administrator of the estate of the doctor, who had died after the suit was begun.

The court concluded, after an elaborate digest of the evidence offered by the plaintiff, that the burn was caused by the cauterizing instrument. It appeared that a crackling or sizzling noise had come from the instrument when it was introduced into the vagina in the region of the symphysis pubis. It also appeared that the plaintiff's own doctor later removed particles of wire from an abscess on the pubic bone which had been caused by the burn and the introduction of the particles of metal.

There was considerable evidence offered by the defendant to show that the apparatus was in the best of condition. However, there being a conflict in the evidence, the jury could decide for itself whether the plaintiff had proved that the hospital was negligent in maintaining and operating the apparatus. There can be no doubt that there was some defect in the apparatus or it would not have given off this so-called sizzling or crackling sound when the current was turned on and when it was applied to the patient. Evidently the jury reasoned that the hospital was negligent in maintaining the apparatus, or else the apparatus would not have so reacted.

S. 1652

Senator Bone of Washington on June 20 introduced *S. 1652*, "A Bill to provide for medical care, subsistence, and treatment in private hospitals and medical attention by civilian physicians and surgeons for certain officers and enlisted men in the military and naval forces of the United States."

Section 2 of the bill reads as follows:

"Sec. 2. Notwithstanding the provision of any other law or any limitation on the expenditure of funds appropriated for the furnishing of medical care, subsistance, and treatment in private hospitals, or medical attention by civilian physicians or surgeons, for officers and enlisted men of the military or naval forces of the United States, the United States shall pay necessary and reasonable hospital expenses and reasonable charges by civilian physicians and surgeons for necessary medical services furnished to or rendered for any officer or enlisted man in the military or naval forces of the United States on account of any injury sustained or acute or serious illness suffered by such officer or enlisted man, which necessitates immediate medical attention, when on an authorized furlough or leave of absence, without interruption of pay and allowances, if (1) such illness or injury is not the result of the wilful misconduct or intoxication of such officer or enlisted man, (2) such illness or injury is suffered or incurred not later than thirty days after the beginning of such furlough or leave of absence, and (3) an Army or Navy hospital or medical officer is not available."

This Bill has been read twice and referred to the Committee on Military Affairs of the Senate.

Safety in Hospitals

GEORGE H. BUCK

THE problem of safety with all of its ramifications pertaining to the work of the hospital employees has been of interest to me for some time. The importance of this phase of hospital administration was brought to my attention quite forcibly a few years ago when I had the opportunity to serve on a safety committee of a hospital association. The results of the work of this committee demonstrated quite clearly the value of concerted effort on the part of hospital administrators in coping with the problem of safety among hospital employees. At the same time, I had the opportunity to see the benefits which resulted from a safety campaign conducted in an individual hospital, bringing about a reduction in the number of accidents to the hospital employees and a subsequent lowering of compensation insurance cost to the hospital.

Until quite recently I have measured the value of accident prevention largely in terms of reducing the cost of operation to the institution; that is, the reduction of lost time for employees and the lowering of insurance premiums by having a low accident experience. An accident happened at my own hospital, however, which put a new light on the problem, that of the well being and the very lives of the employees. I would like to describe this accident, as it demonstrates so forcefully the fact that human lives, as well as expense, are at stake when the simplest rules of safety are disregarded. The accident to which I refer is this. A porter was sitting on the window-sill and leaning outside while washing the outside of a first floor window. Instead of using a safety belt, (he was only a few feet above the ground) he held on to the window casing with one hand as he worked. In some way or other, no one will know exactly how, his hand slipped and he fell out of the window backward, striking his head on a concrete areaway eight feet below the window. His skull was fractured by the fall resulting in instant death.

To those who have never had such a tragedy occur to one of his employees, such an accident does not seem within the realms of possibility.

Presented before convention of the New Jersey State Hospital Association, Atlantic City, May, 1941.

The Author

● **George H. Buck is Superintendent of Mercer Hospital, Trenton, New Jersey.**

Such accidents do occur, however, and will continue to occur with altogether too great frequency until the principles of safety are thoroughly and permanently instilled in the minds, not only of every administrator, but every single hospital employee as well. With this experience so fresh in my mind, I cannot help feeling at this time, more keenly than ever before, the vital need for safety programs in all of our hospitals.

Accident Prevention Programs

It seems to me that the record of hospital employee accident experience presents a sharp challenge to all hospital administrators. The acceptance of this challenge, I feel, we owe not only to our individual hospitals for the purpose of reducing to the lowest possible point the cost of operation, but also to the community and the individual working in the hospital in order that hospitals fully live up to the reason for their existence, that is, for the prevention of illness and the preservation of life. Hospitals should be leaders in accident prevention work as the very nature of our daily work serves as a constant reminder of its importance. But as a matter of fact, hospitals are not leaders in accident prevention work. For many years, industry has carried on safety campaigns and has left hospitals far afield in reducing the hazards of employment. This certainly should be a challenge to those of us who bend all our efforts in the preservation of health.

I feel that there is a challenge from a purely human standpoint. A safety engineer once observed that only 10 per cent of accidents are acts of God, or due to conditions beyond the control of man. The other 90 per cent, he said, are not truly accidents at all; they are due entirely to human failure, carelessness, and incompetence. If we are to accept that statement at its face value certainly we, as thinking human beings, should be aroused

by this charge of failure, carelessness, and incompetence and accept the challenge to do something towards preventing that 90 per cent of the accidents that occur in our hospitals.

Workmen's Compensation Insurance Rates

Another very startling challenge is the fact that in the last decade the rate for Workmen's Compensation Insurance for hospitals has increased by nearly 15 per cent, while the rate for hotels during the same period has decreased, due to the fact that hotels have become safety conscious and have developed plans for training employees in accident prevention.

Workmen's Compensation Insurance rates are based upon the insurance companies experience in the type of institution concerned. The fact that hospital rates have been on the increase means only one thing, that accidents are becoming even more frequent than in the past. The premiums that an individual hospital pays for its Workmen's Compensation Insurance are determined on a base rate established for the entire state. When the individual hospital accident experience is higher than that of the average for the state that hospital pays more than the average rate. If the individual hospital experience is lower than the average for the state, the institution receives what is called a credit rating, which means that it pays less than the average rate for the state. When the majority of hospitals have an accident experience higher than the average for the state over a period of years, the average is gradually raised, thus raising the base rate for all hospitals, even those having a good accident experience. The opposite effect holds true when a majority of the hospitals have an accident record lower than that of the average for the state over a period of years, resulting in lower rates for all hospitals. The number of hospitals in New Jersey having a credit rating is altogether too small. That fact should be challenging to all hospitals as we are all paying higher insurance premiums as the result of it.

Loss of Time Expense

As thought provoking as high insurance premiums are they are not by any means the only important factors in cost of accidents. The Travelers Insurance Company estimates that for every dollar paid out by the Company in compensation for lost time by the injured employee, the employer loses $4.00 in interruption of work of other employees, in time spent in investigation, in cost of training new employees, and in damage done to plant and equipment. As concerned as we are with the problem of rising costs of operation, surely this matter of the cost of accidents cannot be overlooked.

Results of an Accident Prevention Program

The last challenge that I wish to mention is the fact that hospitals that have adopted a safety program, and have followed it through with conscientious effort, have shown excellent results. I wish to read to you a portion of a report by the Chairman of the Insurance Committee of the Board of Directors of one of our New Jersey Hospitals.

> "A complete report was given to the superintendent covering the subject of Workmen's Compensation Insurance, and indicating that the results of the excellent safety program instituted by the superintendent, the underwriters and your committee, were beginning to become apparent. Briefly, for the six year period ending December 31, 1939, the records show that the hospital paid approximately $6800 in premiums and the underwriters paid in losses approximately $9500. The extent of the improvement resulting from the safety program is shown by the fact that for the calendar year 1940 the premium was $1250 and the losses thus far only amount to approximately $100. A continuation of the excellent loss experience, which has been maintained for the last two years, would begin to make itself felt in very considerable reduction in the hospital's rate for compensation insurance, commencing with the next renewal."

The results obtained with a carefully planned safety program are clearly demonstrated by this report and show what can be done.

Installing the Prevention Program

The problem confronting New Jersey hospitals today is how this challenge is to be met. There can be no doubt as to the existence of our desire to reduce accidents to the lowest number possible, but there may be some doubt as to the best course to follow in order to obtain that end.

The experience of hospitals that have given time and effort to accident prevention indicates that best results can be obtained only by the adoption of a carefully planned program and the placing of the responsibility for the execution of this program in the hands of one responsible person. In small hospitals that person would have to be the superintendent and in larger institutions the responsibility can be delegated to an assistant superintendent or to one of the department heads, for example, the chief engineer. The next step is the formation of a safety committee to be composed of all department heads and possibly one or two representatives from among the employees. With this organization as a nucleus, and with each

individual member conscientiously carrying out his own responsibility, any one of a number of safety programs can successfully be carried on.

Points Essential to a Successful Program

For me to map out a safety program in complete detail would be very time-consuming, but I would like to enumerate the points which in my opinion are essential to any program.

1 All new employees should have explained to them the duties and hazards of their jobs and the relationship to the work of others. Many accidents are due to the lack of familiarity of working conditions and hazards, rather than to carelessness. Statistics indicate that the accident rate per 100 employees decreases very rapidly with the length of their time in the service. Thus the rates are very high in groups having a high rate of turnover as in hospitals.

2 Every accident, however trivial, should be reported to the safety committee, showing the name of the injured person, date of injury, treatment given, time lost, cause of injury and the steps taken to prevent this recurrence. These reports should be analyzed by the Safety Committee and used as a means of correcting the conditions which caused the accident. The injured person should appear before the Safety Committee, not for reprimand, but to explain the nature of the accident and help devise means of preventing its recurrence. Recurring accidents of similar type or in the same department should be made the subject of special study.

3 Periodic safety conferences should be held within each department, asking each employee to contribute to the conference.

The active participation in the program by the employee promotes safety consciousness whether definite accidents are studied or not.

4 Attractive and timely safety posters could be kept on the bulletin boards and occasional talks on safety should be given to the employees as a group by the administrator in order to stimulate the interest of the employee and to retain his cooperation with the program.

5 Each employee should be trained in the operation of fire extinguishers and be familiar with their location and with the location and operation of fire alarm boxes.

6 Medical examination should be given to each new employee and at definite periods during his employment, for both his own protection and for that of patients and fellow employees.

7 Working hours should not be too long, as fatigue plays an important role in causing accidents.

8 Safety rules and regulations to fit each type of work should be developed by the safety committee and made available to all department heads and employees.

9 The Safety Committee should see to the inspection of the building and all equipment in routine inspections and provide for the correction of any hazardous condition that is found to exist.

Educating the Employees in Accident Prevention

Regardless of what safety program is adopted, the best results can be obtained if all employees are made to realize and to thoroughly understand the following fundamentals of safety—

Violation of safety practices will be considered at least as serious as violations of other policies, such as honesty, courtesy, and efficiency.

Each employee has a definite responsibility for the safety of other employees and the public, as well as for his own safety.

Accidents are caused by lack of forethought and consequently can be prevented in almost all cases, by forethought on the part of the employees themselves.

Safe working methods are a matter of habit and safe habits can be consciously developed.

Fatigue contributes to the likelihood of accidents and consequently workers should avoid fatigue resulting from excessive loss of sleep, wrong eating and drinking habits and neglect of health and physical fitness while off the job.

Every mechanical and electrical safeguard must be kept in place and properly used.

All injuries, no matter how slight, must be reported promptly and attended to promptly by those authorized to render first aid.

Safety is primarily an attitude of the mind. If one cultivates the habit of thinking along safety lines it becomes automatic to do the thing the safe way, and when things are done the safe way accidents do not occur.

These fundamentals, when developed to their fullest extent, should provide an adequate safety program for any hospital.

Value of a State-Wide Program

When the hospitals of the state have set up their individual safety programs, the next step toward attaining our goal is the setting up of some form of state-wide program for furthering the work of the separate hospital. It is possible that a safety committee could be created in the State Association. This committee could serve the individual hospitals in the following manner. Ac-

cident experience could be gathered from each hospital, using a uniform report form. The compilation of this information would indicate definite trends in types and cause of accidents and as to the best methods of preventing them, thus enabling the committee to make recommendations to hospitals having a poor experience in one type of accident or another. Besides this assistance to the hospitals in carrying out their safety programs by providing them with the combined experience of all hospitals, the committee could, when the time was right, represent the Hospital Association in seeking lower compensation insurance rates for the entire state.

Benefits Accruing from the State-Wide Program

In conclusion I would like to give you my own opinion as to the benefits which would accrue from the adoption of a state-wide safety campaign. First, are the benefits to be derived from the safety campaign in your own hospital. Any safety program, no matter how simple, is bound to result in the development of a safety consciousness on the part of all employees which will inevitably result in fewer accidents, less loss of time, and, eventually, in lower premiums through your obtaining of a credit rating. Also, there are benefits to be derived from the State Association Safety Committee. Through the work of such a committee each individual administrator would have the benefit of the knowledge and experience of other administrators in coping with his accident problems, and when the results of the safety campaigns begin to show, the committee could provide concerted representation and action in dealing with the insurance carriers. Finally, the benefits which represent the attaining of our goal and the meeting the challenge of the existing accident experience are, the lowering of accident cost to hospitals by reducing the number of accidents and cutting insurance rates, and the meeting of our obligation to the public in the protection of lives and preservation of health.

Red Cross Issues Appeal for Nurses

Appealing to all nurses qualified for military service to make known their availability, Miss Mary Beard, national director, American Red Cross Nursing Service, reported today that requirements for the Army and Navy for more nurses have increased greatly in recent weeks.

Miss Beard declared that the response of nurses to the national defense challenge

> "has been splendidly patriotic but thousands more will be needed than was anticipated six months ago.
>
> "These new demands upon the Red Cross First Reserve of Nurses, which is the official reservoir of nursing strength for the Army and Navy, places a tremendous responsibility upon all American nurses. I am confident that their answer will be an overwhelming increase in enrollments in our First Reserve. From the additions to this reserve the Army and Navy should have no difficulty in obtaining the thousands of recruits needed for their nursing services."

The Red Cross First Reserve, she said, now totals approximately 24,000 registered nurses. In the past half year enrollments have come in at the rate of more than 1000 a month, reaching a total of 7590 in the period November through April, compared with 2474 in the same six months a year ago. This is an increase of more than 200 per cent.

The Surgeon General of the Army, Miss Beard said, has informed the Red Cross that 5019 reserve nurses must be on active duty in Army camps by July 1 instead of 4019 as originally scheduled. With the 1135 nurses of the regular Army this makes a total of 6144 Army nurses who will be in the camps and station hospitals by the beginning of the 1942 fiscal year in July.

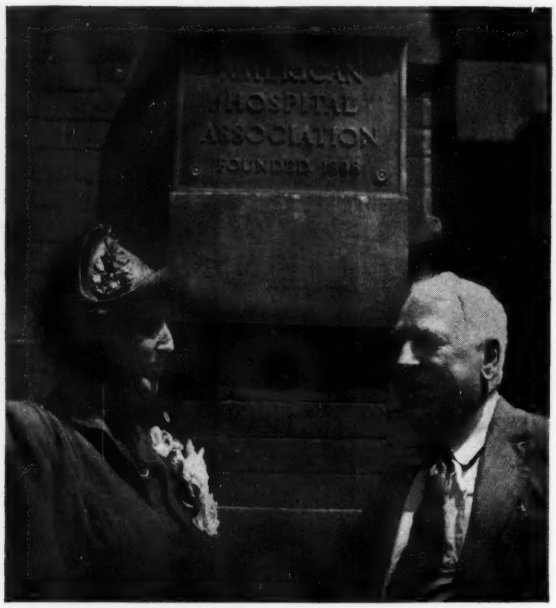
As of May 1 a total of 2478 Red Cross nurses had taken their oaths and reported for duty at camps throughout the country as reserve Army nurses. This leaves a total of 2451 to obtain in the last two months of the current fiscal year.

The authorized total for the Army Nurse Corps in the 1942 fiscal year, including both regulars and reserves, is 8237. Miss Beard pointed out that the Army hopes to build up to this point by next December, which means that between now and then 4624 Red Cross nurses must be inducted into the Reserve of the Army Nurse Corps.

The Navy Nurse Corps must also increase its staff to keep pace with the expanding personnel of the Navy, Miss Beard pointed out. The Navy now has 522 regular nurses on duty plus 109 reserve nurses, making a total of 631. The Navy Nurse Corps Reserve has been built up to 1110 and by June 30 must total 1500. It is understood, Miss Beard said, that this reserve corps, consisting of Red Cross nurses, will be increased materially in the new fiscal year.

Hospital Service Plan News

Prepared by the Hospital Service Plan Commission



Mrs. Edward Walsh, president of the St. Louis Plan, and Dr. Bert W. Caldwell discuss Blue Cross Plan progress at June meeting of the Hospital Service Plan Commission

June Meeting of Commission

Emphasizing Health as the determinant factor in the productive capacity of America's workers, the Hospital Service Plan Commission of the American Hospital Association met in conference on June 4 at the Drake Hotel and Association Headquarters to discuss health safeguards for America's workers and their families.

In a release to the wire services, Dr. Bert W. Caldwell, Executive Secretary of the American Hospital Association set the theme of the meeting. He said,

> "The health of our workers is important to national defense. Hospital administrators and trustees are concerned that all necessary care be made available to American workers and their families. Members of the commission are meeting today to encourage the budgeting of hospital care on a non-profit basis through the two thousand hospitals now members of the Blue Cross Hospital Service Plans. The plans serve an area embracing 80 per cent of the population, and at the present rate of growth the leaders believe that twenty million persons will be protected within a few years.
>
> "In every community where Blue Cross Plans operate, the hospitals, the medical socities, industry, finance and labor are cooperating to extend the hospital protection offered by these plans. It is hoped that more and more the people will come to realize that the hospital is a rehabilitation center," said Doctor Caldwell. "For too many years, some of our people have looked on our hospitals as a last resort, as a desperate measure of resignation. Today the hospital is in fact as well as in deed a health center, equipped with all the latest aids of science. The hospitals are not interested alone in professional and scientific problems, but also in making their services available to the American people. The Blue Cross Plans are set up to eliminate the last deterrent to the use of these health-giving facilities—the financial problem which so often accompanies the need for hospitalization."

Action of the Commission

All members of the Commission were present, with the exception of John A. Connor of Columbus, Ohio. As Chairmen respectively of the Committee on National Accounts, and the Committee on Public Education, A. M. Calvin and R. F. Cahalane attended the meeting and presented reports.

The following resolution recommending the extension of credit to hospital service plan subscribers by non-member hospitals was approved unanimously by the Hospital Service Plan Commission, the Committee on Coordination of Activities, and the Board of Trustees of the American Hospital Association.

a. *Whereas* the hospitals of America render a community service to the American people and to the residents of their respective areas, and

b. *Whereas* the American Hospital Association has established standards and administers a program of annual approval for Hospital Service Plans, which program is

intended to protect the interests of the subscribers and member-hospitals, and

c. *Whereas* approved Hospital Service Plans, through emphasis upon the principle of self-help, tend to stabilize hospital income and to preserve the voluntary hospital system, and

d. *Whereas* the benefits available to the subscribers of approved Hospital Service Plans are clearly described in a *Directory* published and distributed by the Hospital Service Plan Commission of the American Hospital Association,

Be It Resolved: that the membership of the American Hospital Association will serve the public interests and improve the service to subscribers:

a. If all hospitals will recognize paid-up memberships in approved Hospital Service Plans generally as the basis for extending credit for services to subscribers of approved Plans, in accord with their various subscription agreements.

b. If hospitals will, wherever possible, look to their respective local Plans for verification of membership and authorization for services to subscribers of other approved Plans, in accordance with the respective subscription agreements.

Suggested Methods

The following paragraphs are adapted from an administrative order over the signature of the administrator of a well-known member hospital of one of the large approved Blue Cross Plans. It suggests the type of memorandum which might be used to implement the foregoing resolution of the Hospital Service Plan Commission, Coordinating Committee, and Board of Trustees of the American Hospital Association.

"Whenever a patient applying for admission asks for recognition of membership in an out-of-town Plan, the admitting officer will look up the Plan in the Directory of Nonprofit Hospital Service Plans. If the particular plan is *not* listed, extension of credit to the patient shall be determined in the same manner as now pertains to nonmembers of Plans.

"If the Plan is listed, the admitting officer will note the details concerning the Plan in question, and will make sufficient inquiry of the patient and/or his doctor to satisfy any doubts as to whether the particular case is of a type which our plan would approve for one of *its* members. If the admitting officer finds that in all probability the patient is eligible to benefits from his own Plan, credit may be conditionally extended to the amount of that Plan's listed benefits, pending a report to us, from the Plan itself.

"Insofar as possible, please utilize the services of our Blue Cross Plan for vertification of membership, and authorization for services to subscribers of other approved plans, in accordance with their respective subscription agreements.

"This order in no way alters the hospital's standing rule that members of out-of-town Plans are charged our regular rates, remittances from their Plans being credited as payments on account."

Convention Program Developed

Members of the Commission spent considerable time working out an effective program for the Atlantic City Convention, September 15, 16, and 17. The tentative program is outlined as follows:

Monday, September 15

10:00 A. M.

Hospital Service Plan Commission (Ambassador)

2:00-4:30 P. M.

House of Delegates of the American Hospital Association to consider By-Laws Amendments (Convention Hall)

2:00-4:30 P. M.

Hospital Service Plan Round Tables (Ambassador). A. Reserves. B. Public Education Methods

7:30-9:00 P. M.

Business Session of Hospital Service Plans (Ambassador). Consideration of action by House of Delegates; Report of Nominating Committee and further nominations; Other Business

7:30-9:00 P. M.

Hospital Service Plan Round Tables (Ambassador). Maintaining and Servicing Accounts

Tuesday, September 16

9:30-11:00 A. M.

Hospital Service Plan Round Tables (Ambassador). A. Out-of-Town Benefits. B. Factors Affecting Experience

11:00-12:30 P. M.

Business Meetings, Hospital Service Plans (Ambassador). Election of Hospital Service Plan Commission; Other Business

2:00-4:00 P. M.

American Hospital Association (Convention Hall)

Round Table: Hospitals and Blue Cross Plans

Coordinator: E. A. Van Steenwyk, Philadelphia, Chairman, Hospital Service Plan Commission

Panel Discussants: Chairmen of Committees

2:00-4:00 P. M.

Hospital Service Plan Round Tables (Ambassador). Medium-Sized Plans (Internal Problems)

7:00-9:00 P. M.

Hospital Service Plan Round Tables (Ambassador). A. Medium-Sized Plans (External Problems). B. Medical Service Plans

Wednesday, September 17

9:30-11:00 A. M.

American Hospital Association (Convention Hall)

Chairman: H. T. Sorg, President, Hospital Service Plan of New Jersey

Introduced by C. R. Burnett, Executive Vice-President

1. Curent Problems—Director of the Commission
2. Medical Service Plans—Physician
3. Talk by Industrial Leader
4. General Discussion

2:00-4:30 P. M.

Business Session, Hospital Service Plans (Ambassador). Consideration of Future Program. Presentation of Budget by Permanent Commission. Other Business

6:00 P. M.

Dinner Meeting: Guest Speaker

J. Albert Durgom, Director, and C. R. Burnett, Executive Vice President of the Hospital Service Plan of New Jersey are in charge of local arrangements. Frank Van Dyk of New York City and E. A. Van Steenwyk of Philadelphia have offered to cooperate in the social activities.

The "Business" of Hospitalization

Hospitalization is a big business, but not of the ordinary kind. It is essentially a public service, financed by the general population either through their voluntary activities or through taxation. The hospital is at once a hotel, a home, an educational institution, and a place of business. It provides medical care, nursing, and board and room service to customers who are sick in body and mind, and each of whom faces an emotional crisis; the possibility of death and the probability of a large economic expenditure which must be met by him or somebody else.

The people own the hospitals, the people use the hospitals, and the people must support the hospitals. A growing trend in America is the recognition of the hospital as a public service institution. Yet one must not make of hospitalization a mere routine or machine-built process from which the patients are delivered as a finished product. The patient is also a human being, and the beginning and the end of hospital service must be the saving and enrichment of his life. Hospitals everywhere must combine within their walls and in their relationships to the community an example of individual responsibility, based upon the recognition of their social obligations to the people who comprise the population.

The American people believe that there is a practical advantage in utilizing voluntary institutions and payments to the utmost in the field of health service before resorting to the use of compulsory governmental taxation. The advantage lies in the feeling of personal responsibility on the part of the individual patient or contributor. This feeling of personal responsibility and self-respect increases his appreciation of cooperation with the institutions and professional groups who serve him.

C. R. R.

An Experiment in Cooperation

On the heels of the recommendation of the Coordinating Committee of the American Hospital Association that "the Board of Trustees be asked to arrange for a joint committee representing the American Hospital Association and the Hospital Service Plans for the purpose of developing a plan for a centralized, jointly operated department of public education," comes an interesting story from the Hospital Service Corporation of Western New York, Carl M. Metzger, Director.

The Blue Cross Plan and the Hospital Council are participating "fifty-fifty" on an educational program. The Plan does the work; the Council puts up half the necessary funds. This program is intended primarily to popularize the hospitals with the public, but the "Blue Cross" service is always mentioned to some degree in the literature or programs produced by the joint activities. The Council feels that they can help themselves more by boosting the "Blue Cross" than in any other way.

A recent folder entitled "Then and Now," issued under this set-up, devoted three pages to describing a short history of hospitals, their improvement in hospital construction and equipment, one page to the general purpose and function of group hospital service plans, and one page to the cooperation of the hospitals as members of both the Council and the Plan.

We hope in this educational program to issue a series of these folders, supplemented by newspaper publicity and free radio time.

Hospital Day Broadcast Is Available

Plans have commented with enthusiasm on the effectiveness of the Hospital Day Broadcast, participated in by Dr. B. W. Black, Dr. A. C. Bachmeyer, Dr. Malcolm T. MacEachern and C. Rufus Rorem. Because of this interest, the Commission arranged to have a transcription made of the broadcast. The material was edited, the actors

assembled together again, and the script was cut on 16-inch records, suitable for radio station use. The reverse of the transcription will carry a story about the development of the movement. The Plans will thus have two 15-minute programs to offer their local stations. Copies are available without charge to participating Plans. These first two transcriptions are in the nature of an experiment, and the receipt of comments, criticisms, suggestions will be appreciated. If Plans have any especially effective radio scripts they would like to have recorded and offered to all cooperating Plans, they are asked to forward them to the Hospital Service Plan Commission office.

Five Years of Community Service

In the Gold Room of the Hotel Jefferson, St. Louis, on May 26, the St. Louis Plan—Group Hospital Service, Inc.—observed its Fifth Anniversary of Service to the Community with a Dinner Meeting attended by corporate members and representatives of the Plan's enrolled groups. The dinner was attended by almost 1000 persons. The Reverend A. M. Schwitalla, S. J., was toastmaster, and the principal addresses were made by Mrs. Edward J. Walsh, president of the Plan, and James A. Hamilton, President, American College of Hospital Administrators. The theme of the dinner was Appreciation—appreciation of the work of the voluntary Group Leaders who have cooperated in making the St. Louis Plan outstanding among leaders in the movement.

C. Rufus Rorem, who attended the dinner, commented as follows:

> "This type of meeting demonstrates its value in the good will it creates. One had the feeling in St. Louis that all those in attendance were working together for the good of the community, that they had an important share in the health advance of the citizens, and that this was an occasion of rejoicing over accomplishment and resolution as to future development."

Hospitalization Insurer Is Held for Malpractice of Doctors It Employed

Hospitalization companies are liable in damages for injuries sustained by members from the malpractice of physicians employed by the hospitalization company, according to the Oregon Supreme Court in *Giusti vs. C. H. Weston Co., et al.* Judgment of $5000 against the company and two physicians employed by the company who treated the patient, was given in the lower court. On appeal, the case was reversed because of errors, but the liability of the hospitalization company was emphatically affirmed.

The C. H. Weston Co. is an Oregon corporation authorized to do business as a hospital association. Its physicians were paid a monthly salary and were furnished offices in connection with the Weston offices. The defense of the Weston Co. was that the physicians were independent contractors. The court pointed out that they were regular employees and rendering services which the corporation was organized to render.

It is not believed that insurance companies are exposed to the malpractice hazard. Ordinarily an insurance company pays the benefits to the insured, who in turn pays the doctor or hospital.

—*The Accident and Health Review*, June, 1941.

Problem of Rural Enrollment

Statement by J. G. Crownhart, secretary of the State Medical Society of Wisconsin at Madison:

> "It should be clearly understood at the outset that compulsory sickness insurance in the United States could, at its best, cover only those who are employed on wages or salary. Under all proposals made to date, that we have examined, substantially the entire farm population has been excluded, for, unless the system were Federally operated through the sale of tax stamps by each post office and rural carrier, it becomes far too expensive to endeavor to make tax collections in any other way than by the employer of groups acting in that capacity for the government."

The Spectator
June 5, 1941

"Government as a rule undertakes no services or regulation except after private agencies have proved themselves incapable or unwilling."

Justice Frankfurter

R. J. Marsh, executive director of Huntington Hospital Service, Inc., has been elected President of the Huntington Council of Social Agencies. The election took place at the council's annual banquet in Hotel Governor Cabell. The honor was bestowed on Mr. Marsh in recognition of his special interest in the welfare of the citizens of his community.

* * *

The Pennsylvania Insurance Department reports that the nonprofit hospitalization association known as Union Hospital Service Association of Pittsburgh, Pennsylvania, has discontinued operations. It was licensed by the Pennsylvania Insurance Department on January 26, 1938.

* * *

At a meeting of the Board of Directors of the Associated Hospital Corporation of Massachusetts, held May 15, it was recommended that the corporate name be changed to "Massachusetts Hospital Service." The change will take effect shortly.

Purchasing of Processed Fruits and Vegetables

PAUL M. WILLIAMS

THE position of purchasing agents of food for hospitals imposes a very definite, weighty responsibility. It is not necessary for me to dwell at length upon the importance of proper diets for your patients nor to spend any time stressing the desirability of making sure you get the quality of canned foods, for example, you select for your particular purposes. Neither is it necessary for me to explain at any length the ramifications of research conducted by the Department of Agriculture in the field of foods. The production, preparation, processing, grading, and inspection of our agricultural products have been studied in minute detail by the various agencies of the Department it is my privilege to represent.

The Agricultural Marketing Service, with which I am more directly connected is concerned with the development of standards for grades of agricultural products in their many forms. My particular concern is the standardization and inspection of processed fruits and vegetables, canned, dried, and frozen. Some of you are doubtless familiar with the fact that in recent years we have announced standards for grades of practically every fruit and vegetable and many by-products. These standards are used in connection with our far-flung, nation-wide commercial inspection service.

Nature blesses this country with fruits and vegetables in abundance. As they come from the fields or orchards they are ordinarily separated or sorted into various classifications of quality. Thus, the grower of high grade products should receive more for the products he has carefully produced than the not-so-careful grower. Another reason for such separation is that in selling the commodities in wholesale channels each lot is sold on the basis of a recognized standard. In order to make it easy for consumers and institutional purchasers to purchase intelligently the quality best suited for your particular need, we have chosen to call the top grade of canned, dried, and frozen fruits and vegetables U. S. Grade A, the next grade U. S. Grade B, and the third quality U. S. Grade C. These terms might be likened to the trade nomenclature Fancy, Choice or Extra Standard, and Standard, respectively. Grade A represents the finest quality canned fruits and vegetables, carefully selected as to size, color, degree of maturity, and freedom from blemishes. Grade B consists of fruits and vegetables of excellent quality, though not quite so well selected as to color, size, and maturity as Grade A. products. Products in the Grade C classification are of good quality but are not so uniform in color, size, and maturity as those in Grade B.

The Author

● **Paul M. Williams is Senior Marketing Specialist of the Department of Agriculture, Washington, D. C.**

Procuring Subsistence Supplies

I suspect that you are confronted with three very real problems in the procurement of subsistence supplies for hospitals.

1 You are obliged to select the particular quality of food you need for a specific purpose. For example, you may estimate your requirements of canned peaches at 5000 cases for the year. Three thousand cases of these may be for dessert purposes and you will want either clingstone or freestone types in halves or sliced. You might select either U. S. Grade A, U. S. Grade B, or U. S. Grade C. Perhaps you may have need for 2000 cases of Pie Grade peaches which, incidentally, in the standards of this Service, we designate as U. S. Grade F, commonly known as solid pack pie.

2 After you have selected the particular quality of merchandise you desire you must indicate to those from whom you purchase, the quality you wish. Government purchasing organizations find it greatly to their benefit to submit to bidders specifications in minute detail indicating the qual-

Lecture before the American Hospital Association Institute on Hospital Purchasing, Johns Hopkins University, Baltimore, Maryland, June 1941.

ity of each item desired, number of cases, the style of the commodity, the size of the can, how the goods are to be labeled, how they are to be packed (in fiber or wooden cases), and how the cases are to be stenciled. They also indicate the point at which delivery is to be made. Some time ago the Agricultural Marketing Service published a suggested outline for specifications for canned fruits and vegetables, which has had wide distribution among purchasing agents. Copies of this publication are available upon request. In this pamphlet a suggested form of contract is outlined.

3 Your next problem is to make certain you are getting the quality you purchased, and here again this Service may be of help to you. The section which is my chief concern has to do with the inspection of vast quantities of processed fruits and vegetables throughout the United States. We have branch offices located throughout the entire Nation. Today practically every one of those offices is confronted with a huge volume of requests for inspections for commercial institutions, the Army, the Surplus Marketing Administration, the Veterans Administration, and other governmental agencies. A large proportion of these goods is inspected before leaving the point of origin, oftentimes in the canner's warehouse. In many instances we supervise the loading into cars and trucks of the goods our men have inspected. After loading, Federal seals are applied to the cars. In other instances merchandise bought f.o.b. destination is sampled by the office nearest the destination point and graded to ascertain whether the specification requirements are met. A certificate of quality is issued as a result of each examination. When goods are inspected at shipping point the certificate of grade usually accompanies shipping documents to the receiver. When inspections are made at destination the certificate is sent direct to the applicant for service. In case of purchases for hospitals samples may be drawn from the lot by official graders, if our graders have time to draw them, or they may be drawn by a representative of the hospital and delivered to our inspection offices. For these services the Department assesses a fee. Roughly, the fee is $5.00 per thousand cases if a Federal inspector draws the samples. If the samples are delivered to our offices, the fee is assessed at the rate of 35 cents for a No. 3 or smaller can and 65 cents for a No. 5 or larger can. I shall not dwell on this, because, if any of you are interested, another publication of the Department outlines this procedure in detail.

Informative Information on Labels

Something else is happening which should vastly simplify your procurement problems in this field. Some years ago, shortly after we developed the first tentative standards for canned products, we suggested that it would be in the interest of honesty and fair dealing if the vendors of canned products were to state on the label of each can the quality and other salient points concerning the merchandise in the can. We suggested that the information on labels, in order to be truly informative, should be of two types: (1) A truthful, concise statement of grade in such terms as "Grade A," "Grade B," and "Grade C"; (2) Such additional descriptive information as may be appropriate for the product, such as count of pieces in a can of peaches, sieve size of peas, strength of sirup on fruit, number of servings, etc.

It may be that some of you have heard of this, particularly in recent months, because there seems to be a great deal of confusion in the minds of some in connection with this suggestion. To us it seems perfectly obvious that the interest of consumers such as yourselves would be well served if the grade name and additional descriptive information were stated on the label. It also seems to us that there should be no hesitancy on the part of the vendor to take the prospective consumer buyer into his confidence and state the truth on the label in simple, easily understood terms. It should be very simple for the canner or distributor to do this, because he knows the grade of his various lots. We think you have a right to know in detail the facts concerning each item of food you buy.

If a man places the term "Grade A," "Grade B," or "Grade C," or, for that matter "Fancy," "Choice," or "Standard" on his label, the goods in the can must be of the grade claimed; otherwise, if they move in interstate commerce, they will be in violation of the Federal Food, Drug, and Cosmetic Act and be subject to seizure under that law. The consumer, therefore, has a very real protection.

The mere fact that you see Grade A, Grade B, and Grade C on millions of cans of products these days does not mean, necessarily, that these goods have been graded by the Department of Agriculture. The responsibility in the eyes of the law for the truthful labeling of any lot of goods moving in interstate commerce rests solely with the vendor.

Contracting for Goods of Federal Standard

One of the things you might incorporate in your contract is that the goods meet a certain Federal standard, just as the Federal Government Departments do.

When you think this thing through there is nothing mysterious or impossible in connection

with putting the truth on the label for the benefit of the consumer. You have but to remember that every carload of canned foods in wholesale channels is sold on the basis of some grade, either expressed or implied. Some vendors convey the idea of quality through the medium of brand names. Doubtless many of you have had experience with that method. If a man merely uses his brand name on a can in order to indicate quality, he is without the reach of the law, because he has made no actual claim for the quality of the goods on the label.

The honest, careful, prudent packer or distributor of course wishes to maintain his identity, and brand names make it possible for him to do so. We do feel, however, that his brands would be greatly benefited and fortified and probably his sales would be stimulated by including with the brand name factual information concerning quality.

When the Use of the Prefix "U. S." is Permitted

There has been another important development in recent months. I have remarked that vendors could use the Department grades, "Grade A," "Grade B," and "Grade C" on their labels, even without Government inspection. Some time ago the question arose as to whether they could use the prefix "U. S." in connection with their grade statements. The answer was no, unless the product thus labeled was packed in a plant operating under the continuous inspection of Federal inspectors stationed in the plant observing each step in the operation and, subsequently certifying the grade of each lot. A number of canners indicated their interest in having such a service in order that they might do this. We were obliged to decline their requests because we did not have means, at that time, to conduct such a service. As the requests became more insistent, however, it occurred to us that it might be advisable to experiment in this field in order to ascertain whether such labeling would command the respect of the consumers and thus promote the sale of more canned foods and whether a wider market would develop for the growers of canning crops. Last year we invited six canning plants to join with us in the experiment. For the most part these plants packed fruits. The plants were selected with due regard to the excellence of plant equipment, their location with respect to raw materials, the disposition of the personnel to cooperate with us in improving their packs, their willingness to operate under housekeeping rules we laid down with regard to sanitation, and a number of other considerations.

Continuous Government Inspection

There is now on the market in very limited volume merchandise labeled with a shield of this Department in which is shown the term "U. S. Grade A," "U. S. Grade B," or "U. S. Grade C" and perhaps another shield in which appears the statement "Packed under continuous inspection of the Agricultural Marketing Service of the U. S. Department of Agriculture," which these cutouts illustrate. Our inspectors were in these six plants at all times during their operation last year. They observed every step in the operation of the plants from the time the goods were received in the receiving sheds until they were finally graded out and certified as to grade, days later. The salary of inspectors, their incidental expenses, and a stated amount for overhead in supervising the work was paid by the canners.

Consumer Opinion

Then in order to sound out consumer opinion as to the practicability of the new service we enlisted the cooperation of the home economics departments of several of the leading universities of the United States. Displays were built in stores throughout the country and purchasers of products bearing the new labels were asked to fill in a questionnaire after they had used the product. Only one university has completed its initial survey and released its findings to the press. I now quote from the release of Dr. Jessie V. Coles, Associate Home Economist, New York University:

> "The results of the study show that 97 per cent of those who used canned foods graded by and packed under the continuous inspection of the United States Marketing Service liked them well enough to buy them again. No one stated a preference for ungraded over graded products and only three per cent were in doubt as to whether or not they preferred graded foods. Great confidence was expressed in the government service and in many cases the need for such service was stated specifically by the homemakers interviewed.
>
> "The greater uniformity in quality secured by such grading and inspection services apparently appealed to the consumers since this was the most frequently given reason for desiring government grading.
>
> "The homemaker's ability to judge quality and to get the most value for the money expended were the next important reasons for buying graded foods."

The continuous inspection experiment attracted a great deal of attention, in fact so much so that we have felt justified in inviting a few more plants to cooperate this season. Accordingly, at least 20 plants will operate this year under the continuous inspection service. They are scattered rather

widely over the United States. I have available lists of the canners cooperating with the Department in this experiment and the commodities they pack.

Whether the experiment is continued and grows into a permanent service of the Department depends upon the results. Those of you who place contracts with such canners may have each shipment accompanied by an official certificate of grade.

Cost of Inspection Service to the Canner

Incidentally, we are frequently asked what the service will cost the canner. While it is a little early to state just what the exact cost will be, it will probably range from ⅓ cent to ¾ cent a case, depending upon the volume packed in each plant.

Someone has said that there are probably no less than 10,000 brands of canned fruits and vegetables on the market. If we were to go into an imaginary grocery store this morning which had every one of the 10,000 brands stocked, it would be well to remember that every can is one of four grades or qualities. It is either Grade A or Fancy, Grade B or Extra Standard, Grade C or Standard, or below U. S. Standard, that is, Substandard.

Nature gives us the crops; the processor uses them as nature gives them to us. Since all of them are sold in wholesale channels on the basis of some grade, why not carry this information as to quality on to the actual buyer? If every purchasing agent here were to insist from now on that the grade and other pertinent descriptive information be shown on the labels of the goods he proposed to buy, it would not be long before the labels would carry that information. But whether you in the future are to buy by guess or by grade is only for you to decide.

Automatic Sprinkler System

Many hospitals must continue to carry on in buildings that are of older slow-burning rather than fire-resistant construction, and are thus under constant hazard of fire as well as having high insurance rates.

The patient areas of a hospital are under practically continuous occupancy and supervision, and thus represent a minimal hazard area, as any fire originating in such an area has every chance of early discovery and control.

But laundry and kitchen areas, storerooms, shops, practically all basement areas, and in some types of construction, attic areas, offer an opportunity for fire to gain considerable headway before discovery.

It is for installations in these areas in buildings of slow burning construction that sprinkler systems find their greatest value.

An automatic sprinkler system consists of a system of piping on which are attached small spring-operated valves called sprinkler heads. The valves are held in the closed position by a fusible link. These links may be of such a fusing point as desired—from 130° F. to 500° F. When the temperature of the air reaches the predetermined level—usually 165° F. in hospital installations—the melting of the link releases the spring, which then opens the head and the water drenches an area of 80 to 140 square feet.

The entire system is so arranged as to cover the entire floor area—the heads being spaced from nine feet apart in some types of ceilings up to twelve feet apart in the usual hospital installations.

The system may be operated "wet"—that is, the entire system being filled with water and therefore giving instant action when released—or "dry," for areas exposed to freezing temperatures. In the "dry" system the distribution piping is filled with air at sufficient pressure to prevent the entrance of water, but when a head is released the air escapes and is soon followed by the water.

These systems require a minimum of eighteen pounds of water pressure per square inch for satisfactory operation, and if this pressure is not always available at the highest placed point in the system, it must be reinforced by the use of an automatically controlled "booster" pump.

The protection afforded by such a system can well be evaluated by the fact that when a properly designed system is installed in a building, such as desired, it usually will be possible to secure a reduction in fire insurance rates sufficient to retire the cost of the installation in from four to seven years. The lower figure, if existing water pressure is adequate; the higher, if maintenance of an adequate pressure requires the added expense of the "booster" pump and its accessories.

Laboratory Service in Hospitals

CATHERINE WELSH

THE dearth of material in current periodicals in regard to the subject of laboratory service in hospitals is rather surprising. These last few years have seen so many advancements in our knowledge of laboratory technique that have necessitated changes in the organization and conduct of laboratories that more discussion of the problems arising in connection with them would seem to be advisable. Each year finds new methods that have been developed in research laboratories available for addition to the routine of the clinical laboratory. It has been said that the laboratory is the backbone of the diagnostic machinery in the hospital; therefore, too much emphasis cannot be placed on the importance of adequate physical equipment and personnel.

The Author

● Catherine Welsh is Chief Medical Technologist of Bergen County Hospital, Ridgewood, New Jersey.

New Chemotherapeutic Agents Require Careful Laboratory Control

The increasing use of the new chemotherapeutic agents such as sulfanilamide, sulfapyridine and sulfathiazole require careful laboratory control for the most efficient results. Estimation of the level of concentration of these drugs in the patient's blood is necessary to assure of adequate absorption for combating infection, since experimental studies reveal idiosyncrasies in the capacity for absorption in patients in the same age and weight group. The most effective means of determining individual dosage is to make a daily estimate of the amount of drug in the blood. Concentrations between 3 to 6 mgs. of free drug per 100cc. of blood are usually considered adequate, although for some infections higher levels may be advisable.

To eliminate the factor of drug toxicity, daily urinalyses and blood counts are required, for agranulocytosis, neutropenia and acute hemolytic anemia and renal complications have been observed in patients during the course of treatment. Withdrawal of administration of the drug is generally sufficient to correct these conditions. It is also desirable to know the status of the blood before starting treatment to eliminate confusion in cases which already show anemia or leukopenia but who show no further depression as the result of therapy. The truly remarkable drop in mortality rate in infection due to organisms for which these drugs are effective is one of the outstanding achievements of medical science in recent years.

Estimation of the concentration of these drugs as well as older types of blood chemistry determinations such as quantitative sugar and non-protein nitrogen tests are now facilitated by the adaptation of the photoelectric colorimeter to clinical laboratory work. This ingenious instrument substitutes the photoelectric cell for the eyes of the technician. It not only eliminates errors due to eye fatigue and difference in eye sensitivity of different workers, but enables the laboratory to make reference graphs which take the place of time-consuming preparation of standard solutions for comparison.

Laboratories have long been able to determine specific gravity and the protein content of the blood plasma, but the methods were more complicated and cumbersome than could be easily fitted into a laboratory routine, and consequently were not as widely used as they might have been. Recently, types of apparatus have been developed which can give this information to us in a very few minutes by comparing the time it takes a drop of blood to fall through a liquid, with the time of fall required by a liquid of known specific gravity. This test plays an important part in conditions such as shock, post-operative relapse, pregnancy, hemorrhage, etc., and gives the physician valuable information as to the imminence or severity of shock.

Presented at the Convention of the New Jersey Hospital Association, Atlantic City, May 1941.

Laboratory Tests Help Speed Up Corrective Treatment in Accident Cases

Modern life brings into hospitals annually thousands of patients suffering from automobile and industrial accidents — bone fractures, hemorrhages, burns and many other types of cases where the fluid-solid ratio of the blood is affected. This test exceeds in sensitivity (sometimes by a matter of hours) those changes in pulse rate, blood pressure, and hemoglobin which are perhaps more ordinarily relied upon. Thus the physician receives information which enables him to start corrective treatment before serious clinical changes are apparent.

Routine Laboratory Examinations of Employees

The modern administration of a hospital includes not only medical service for the patients, but provision for the care of employees, both from the standpoint of prevention and of treatment when ill. Laboratory examinations necessarily enter into this service. Aside from laboratory examinations generally made free of charge for sick employees in need of such tests, increasing emphasis has been laid in recent years upon routine medical and laboratory examination for the new employee and periodic check-ups during his term of employment. A routine urinalysis, throat culture, blood count and serological test for each new employee is also a measure of protection for the hospital, and may reveal the employee's unfitness for the tasks to which he was to be assigned, or by the early recognition of potential illness prevent later loss of time off duty for sickness. Special laboratory tests are available for the examination of food-handlers and others who might be potential sources of enteric infections. In this connection the Bronx Hospital reports that periodic feces examinations of the personnel of the kitchen, obstetrical, and pediatric services have resulted in the detection of a number of individuals with positive dysentery cultures.

Laboratory Aids in Bacteriological Control of Various Hospital Procedures

The usefulness of the laboratory for the bacteriological control of various hospital procedures is being given greater recognition. Almost all hospital laboratories have ample facilities for the control of milk, and water supplies, used in the hospital and for sterility tests of solutions used in the operating room and for intravenous therapy. The inauguration in many hospitals of blood banks and plasma banks has meant increased use of the laboratory for control tests.

Doctor Markwith, Director of Health for the State of Ohio, in a recent article says:

"The laboratory should be used to check not only the efficiency of the dressing and instrument sterilizer but the mattress and bed pans sterilizer as well. The laboratory of every hospital should frequently check the public water supply from the different taps throughout the hospital, even though water is secured from a municipal supply. The municipal water supply of a hospital can become contaminated through back-siphonage through improperly installed plumbing. Also, it is well frequently to have the laboratory determine the bacteria count of the dishes, glassware, and silverware."

Testing Tests

The emphasis in the last two years on measures for the detection and eradication of syphilis has brought to light many interesting facts in regard to the laboratory performance of serological tests for this disease. It has brought under severe scrutiny the many varied techniques now in use, some of which have demonstrated themselves as sadly lacking in the necessary sensitivity and specificity for the most efficient results The improvement of serodiagnostic methods has been rapid in the last few years, and good serology depends first on the selection of a recognized test of sufficient sensitivity and specificity. There are enough of these and they differ sufficiently in methods of performance to allow considerable latitude in choice, as far as selecting a technique which best fits the needs of the hospital, taking into consideration the available personnel, and the number of tests to be run.

The U. S. Public Health Service has sponsored several surveys in the last few years which have shown that the Kahn, Kline, Kolmer, Hinton, and Eagle tests fall in this category (and some newer techniques offer much promise). Some of these are flocculation tests, others are complement-fixation tests. The complement-fixation tests are relatively more time-consuming and require greater control of the factors entering into the test, and probably should not be attempted by hospitals routinely doing less tests at a time than are adequate to maintain proper control of the reactions and the reagents entering into them.

There is increasing use of more than ont test for routine diagnostic work, one test to act as a check on the other. A second test is also helpful in picking up those rare positive reactors which respond to some tests and not to others. There is a small group (considerably less than one per cent) of the blood sera which will do this. These reactions have nothing to do with the accuracy of the test but are due to peculiarities of the serum itself. Many laboratories doing double tests use one flocculation and one complement-fixation test.

Influence of Personnel on Test Efficiency

Almost of equal importance to the selection of a good test is the employment of adequate personnel to properly maintain the tests at the highest level of their efficiency, since it has been demonstrated that an inferior technique in the hands of a competent serologist can give better results than a first-rate technique in the hands of an unskilled worker. One of the amazing points brought out in recent survey work has been the divergence of technique in different laboratories supposedly performing well-authenticated tests, which in actual practice sometimes bear little resemblance to the original author's method. Where laboratory methods are handed down from one technician to another in the same laboratory, over a period of years, small variations or short-cuts very often have been put into these tests which appear from day to day not to effect the test materially, but which over a long period of time and many tests may alter appreciably either the sensitivity of the test or its percentage of false reactions.

While it is impossible for every hospital to have workers trained by the authors of the tests they are to perform, it can often be arranged for the person who is to have charge of these tests to take a few months specialized training in serology. The U. S. Public Health Service has already taken a step in this direction in making possible additional training for state laboratory workers in serology, and it is to be expected that this movement for specialized training will gather considerable momentum in the next few years.

Frequent check-testing with other laboratories should also be done as a control measure. Homemade antigens and other reagents used in serology may show variations in performance which materially affect the test and unless they can be controlled by study of their reactions with large numbers of sera, it is likely to be false economy to have them made up in the laboratory instead of purchased from a well-known and reliable source.

The pitfalls of serology, therefore, are many and one of the conclusions to be reached is that hospitals which do not have the time to devote special attention to serology and cannot employ technicians adequately trained in this field, should probably not attempt to do these tests but make arrangements with some larger or central laboratory to take care of their diagnostic work.

Many Problems Center Around the Selection of Competent Laboratory Personnel

Let us look at this hospital worker we call a technician or a technologist, a name which in itself is somewhat of a misnomer, and which is strenuously objected to in some quarters as so general a term as to be meaningless, since we require her to be somewhat of a chemist, a bacteriologist, a serologist, an hematologist, and to have a sound working knowledge of histological technique. She also carries considerable responsibility in the matter of record keeping and in those laboratories which must reply on part-time services of a pathologist, she often is expected to be able to purchase and order supplies and equipment intelligently, assign tasks to other workers and assume administrative responsibilities which place her on similar footing with the executive nurses, the head dietitian, the head of the physio-therapy department and other specialized hospital services.

We should also not overlook the fact, as I think a great many of us are inclined to do, that the laboratory technician in the performance of her duties has bedside contact with the patient, with out-patients and often with the patient's relatives and can be as definite a factor in promoting or discouraging good will and in influencing public opinion as other hospital employees. From this standpoint it would seem logical to assume that the laboratory staff should have the benefit of what counsel and advice is customarily given to the rest of the hospital employees with regard to the proper approach to a patient, particularly when we realize that the majority of technicians are comparatively young, may come directly from college or technical school and are without the benefit of the long apprenticeship served by the nurse or physician.

Training Laboratory Technicians

In connection with the training of laboratory technicians, the activity in recent years of the American Society of Clinical Pathologists in sponsoring a basic training for clinical laboratory workers is filling a much felt want. An administrator seeking a competent technician has often had to add an extra element of chance to his choice that he has not with workers in older fields of hospital service. He has basic requirements of schooling and experience to guide him in choosing the more desirable nurses or physicians making an application for a position, but it is only recently that any attempt has been made to clarify the situation as to what constitutes essential background for a qualified laboratory technician. Ten years ago, anyone who could do a urinalysis, a blood count and a few simple blood chemistries was privileged to call herself a laboratory technician. The requirements of modern laboratory service do not admit of such sketchy training but because of the rapid expansion of this field and the lack of schools and of standardized courses in what few schools there were, many poorly trained or inadequately trained workers entered the field.

Such workers tended to discredit and lower the salary scale of the competent laboratory worker. It is generally recognized now that a qualified laboratory technician should preferably have some college background in science. She should serve at least a year's apprenticeship in a hospital large enough to give her a rotating internship of several months' duration in each branch of laboratory science, such as chemistry, bacteriology, serology, histology, hematology, etc., combined with theoretical lectures on these subjects by the medical staff. This also gives ample time for personality adjustments to be made to hospital environment, so that an administrator may have some confidence in such a laboratory technician's application for a position on his staff.

A great deal of credit is due the American Society of Clinical Pathologists for inaugurating this system of apprenticeship and for the time they have spent in reviewing training programs in various hospitals and guiding prospective students to approved non-profit making schools. However, there are at present facilities for training only about 1000 students a year in such a manner.

Need for More and Better-Trained Technicians

In the September, 1940 issue of *HOSPITALS* magazine there is an editorial calling attention to the need for more and better-trained technicians, and advising that we should have 2000 in training for normal replacement, and to meet the extra demands of the national preparedness program.

If it is true that the larger service which hospitals can give at this time to the national preparedness program is to expand their training schools for nurses, the internships available to medical students, and the training of other skilled workers, then a good deal more thought might well be given to the problem of increasing the supply of adequately trained technicians.

There are in reality two great wars in progress at the present time, one the European war with its great destruction of humanity, and the other the ceaseless war against disease and pain and suffering, to which the majority of us have dedicated our lives. In the months to come, greater dependence than ever will be placed upon civilian hospitals and the specialized services they are capable of rendering. Many hospital laboratories in the state are even now actively engaged in assisting the selective service boards by the examination of specimens from prospective draftees.

Adjustments to these new demands must be one of our chief concerns. Ours in a sense is a permanent army whose primary objective is the saving of human life, and those of us in the laboratory field are ready and anxious to assume our share of the added responsibility which this national defense program will entail.

Walter J. Grolton Goes to University of Arkansas Hospital

Walter J. Grolton, for the past several years superintendent of the City Hospital, St. Louis, Missouri, has resigned, effective July 1, to accept the appointment as superintendent of the University of Arkansas Hospital, Little Rock, Arkansas.

Previous to his accepting the superintendency of the St. Louis City Hospital, Mr. Grolton was superintendent of the Frisco Railway Employees' Hospital at St. Louis. For many years Mr. Grolton was secretary of the Mid-West Hospital Association and one of its organizers. He has long been prominent in the hospital administrative field in the middle west.

Doctor Rowlette Resigns

Dr. Avery P. Rowlette has resigned as medical director of the City Hospital, St. Louis, Missouri, effective July 1, and Dr. Leo V. Mulligan has been appointed as his successor.

Bird S. Coler

Bird S. Coler, a life member of the American Hospital Association since 1929, died on June 12 at the Caledonia Hospital, Brooklyn, New York, at the age of 72. Mr. Coler was a resident of New York during his entire life.

Mr. Coler was intimately interested in hospitals and the work they were doing, and he took an active interest in the affairs of the American Hospital Association. Mr. Coler was elected comptroller of the First Administration of Greater New York; was a Democratic candidate for Governor of the State of New York in 1902, and in 1905 was elected president of the Borough of Brooklyn. He was an outstanding authority on municipal government.

During Mr. Coler's term as comptroller and president of the Borough of Brooklyn, he took a personal interest in the hospitals of Greater New York and was frequently consulted upon administrative and financial affairs by many of the voluntary institutions in the New York area.

Air Conditioning — Its Use and Limitations in Clinics and Hospitals

CHARLES SHEARD, Ph.D.

WE ARE all familiar with the oft-quoted statement, attributed to Mark Twain, that everybody talks about the weather, cusses and discusses it, but nobody does anything about it. Man lives surrounded by an environment produced by the great weather engine driven by the sun. To the extent that man understands the elements that go to make up the weather and to the degree that he knows his own body and its workings—for it too is an engine—is he able to live comfortably and in health, and thus to escape the stigma of Twain's observation.

Only by properly adjusting himself to the great out-of-door weather is man able to do anything about it. On the other hand, man has made great progress in being able to regulate the weather of domains over which he has some control, such as homes, offices, factories, schools and hospitals. As man learned to build domiciles to keep out the heat and the cold, to close openings by oiled paper and parchment that would let in light and keep out the inclemencies of the weather, on and up to the present day has he been making progress in the control of temperature, humidity, air circulation, air filtration and all factors which may not only make him more comfortable and efficient but also, perchance, serve as accessory factors in the maintenance of health and, when sickness comes, to serve also as accessory factors working toward the restoration of health and well-being.

As Free and Hoke[6] stated in their volume on "Weather":

> "What the body really needs is the opportunity to get rid of heat, and that is the secret of efficient ventilating systems which control the heat-removing power of air by cooling it and drying it at the same time. The refrigerating systems installed by theaters and motion picture houses owe most of the comfort they produce to the fact that the refrigeration used dries air as well as cools it."

(But there are many installations of air conditioning equipment in which no provision is made for dehumidification and, as a result, as the air is cooled, the relative humidity is increased.)

> "Such systems are slowly being introduced into factories, for it has been discovered that comfortable workmen are more efficient workmen."

Adaptations of these systems are now being installed in homes, for it is just as foolish to suffer indoors from the "heat" of summer as it would be to return to old-fashioned unheated houses in winter. Homes are now being warmed and moistened in winter, and cooled and dried in summer. It is to be remembered, then, that the doctors, nurses, and attendants are the workmen in the clinics and hospitals, and that the patients are housed in homes which we call hospitals for a matter of a week or ten days or for much longer periods on occasion. Therefore, considerations which apply to laymen and doctors in the ordinary pursuits of life also apply to them, and perchance even more definitely and rigidly, when they are concerned with sickness.

Much has been written and said regarding the practicability of creating the optimal climatic conditions in operating rooms and in patient's rooms. The atmospheric conditions of patients' rooms should vary, in part at least, with the nature of the illness. Little by little research workers in the fields of biology and medicine, as well as practicing physicians, are finding out the conditions

The Author

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which are best suited to the patient's welfare in such ailments and diseases as allergy, rheumatism and rheumatic fever, peripheral vascular diseases, as well as the climatic criteria which should be maintained in operating rooms, obstetrical sections and nurseries. Air conditioning engineers are able today to make available at reasonable cost the climatic conditions of the room or habitat of the patient, whether this be in a hospital or in a private home. Much of this is possible by reason of the availability and excellence of construction and operation of various sized units, rated according to tons of refrigeration, which may be installed to control individual rooms. Hence it is not necessary or desirable to attempt to air condition in toto clinic buildings or hospitals but rather to supply a general system of ventilation and air movement with special units, which may be set and controlled as desired, in operating rooms and patients' rooms. In general, it is likely that not over 30 per cent of the total hospital or clinic needs to be air conditioned.

The kind and amount of air conditioning desirable for any hospital or clinic must be judged on the basis of the following factors, very succinctly stated in a recent article by Ancel Keys[10]:

Comfort of the patients
General benefit to health apart from comfort
Specific applications to particular diseases or conditions
Increased efficiency of the staff
The possibility of increased business
The general sympathy for the idea as "progress."

The particular type or types of installation (general ventilation with some cooling as provided by circulation of cold water, supplemented by special units) can only be decided in consultation with air conditioning engineers. The activities of the American Society of Heating and Ventilating Engineers are to be commended, and those who are concerned with problems of heating and ventilating will derive much valuable information from the *Guide* and from the *Transactions* of the Society which are published yearly.

Production and Loss of Body Heat

Before passing on to a consideration of air conditioning and how it may be produced and controlled, it may be desirable to consider briefly thermal interchanges between the body and its atmospheric environment. In the first place, the approximate constancy of the internal temperature (98.6° F.) of the body, even under rather wide extremes of atmospheric conditions, is the result of the balance between the heat of oxidation and the loss of heat from the body. Only in disease may there be a significant departure from the equality of heat production and heat loss.

There are three main channels by which the human body accomplishes its loss of heat, namely, radiation, convection, and vaporization. In what are referred to as conditions of "still air" (an air velocity of, say, 10 to 25 feet per minute), with a normal subject in the basal state (without food for eighteen to twenty-four hours), in the reclining or horizontal position and in an environment of about 78° F. and 40 per cent relative humidity, there will be a loss of heat from the body to the environment proportioned somewhat as follows: radiation, 65 to 70 per cent, convection, 10 to 15 per cent, and evaporation of moisture from the surface of the body, about 20 per cent. The loss of heat, through the various avenues provided, depends on the surface area and the difference between the temperature of the body and that of its surroundings. Man's conscious adjustment, the central nervous system and the peripheral regulators utilize the channels of radiation, convection and vaporization in a rather complex manner.

If it is necessary to increase heat loss, one seeks a cooler environment, divests himself of clothing and finds a spot where there is increased movement of air. At the same time, the heat-regulating center comes into operation and acts through vasodilatation of the peripheral blood vessels, bringing the warm blood to the surface and causing a decrease in the temperature gradients between the deeper tissues and the radiating surface. If the need for the loss of heat is still greater, the sweat glands are called into action and evaporative regulation is then largely responsible for the maintenance of equality between the production of heat and the loss of heat, a situation which must exist if the internal temperature of the body is to remain constant.

Numerous investigations which have been conducted in recent years emphasize the fundamental importance of the problems of the thermal exchanges between the body and its environment. I am simply calling to your attention the work of DuBois and Hardy,[5,7,8] Winslow, Herrington and Gagge,[18,19] and of Burton[3,4] regarding partitional calorimetry, and the work of the author and his associates, Doctors Horton, Roth, and Williams,[13,14,15,16] concerning the role of the extremities in the regulation and control of the dissipation of heat from the body.

Zones of Physiologic Response

Various investigations, in which somewhat dif-

ferent methods have been employed, indicate that the lightly clothed, reclining subjects exhibit normal and easy physiologic regulation, between air temperatures of 25° and 31° C. (77° and 88° F.), largely by vasomoter regulation (shift of blood to the periphery of the body). Above 88° F. (31° C.) the individual adapts by active secretion of sweat (zone of evaporative regulation). Below 77° F. (25° C.) the skin temperature falls, but adaptation is incomplete and the temperatures of the body tissues fall more or less continuously (zone of body cooling). The first and most marked changes in the zone of body cooling occur in the lower extremities, and are evidenced by skin temperatures of the toes which approximate room temperature (77° F., for example) whereas the temperature of the forehead will be 96° to 97° F. And again, metabolic rates have much to do with the limits of these various zones of physiologic response, for the higher the metabolic rate the lower will be the environmental temperature at which sweating becomes active, and so forth.

From these considerations and other data which have been published, a normal subject lightly clothed and pursuing a white-collar job will be comfortable and will not experience sweating on the one hand or a feeling of chilliness on the other hand within ranges of temperature extending from 70° to 84° F. On the average, a temperature of 78° to 80° F., with a relative humidity of 30 to 40 per cent, is considered very comfortable by subjects who do not have high basal metabolisms (as in hyperthyroidism) or abnormally low metabolic rates (as in undernourishment or in myxedema). Furthermore, within the range of approximately 70° to 84° F. (21° to 29° C.) there are no changes in body temperature: blood flow to the skin is changed so that the loss of heat is automatically adjusted to the environment; there is no sweating or generalized feeling of warmth or cold.

Air Conditioning

Having considered the ways and means of interchange of heat between the body and its environment and knowing something about what the body does to adapt itself to its environment, we may consider how we may advantageously change environmental conditions by air conditioning. The expression "air conditioning" may be defined variously but it is obviously, as the term implies, any attempt to maintain atmospheric conditions other than those which exist at the time. The definition given by engineers is:

> "The term air conditioning in its broadest sense implies control of any or all of the physical or chemical properties of the air. More particularly, it includes the simultaneous control of temperature, humidity, movement and purity of the air."[1]

Full and complete air conditioning would involve the provision for complete control of temperature and humidity, the removal of dust, pollens and so forth, and the maintenance of air circulation. Special types of air conditioning for use in the treatment of disease are oxygen tents and masks, cabinets for fever therapy, and, in war zones, equipment to serve as protection against and to aid in the treatment of poisoning by gas.

Circulation and Renewal of Air

The first and prime requisite in air conditioning is air movement. Often the idea prevails that stuffiness of a room is due to lack of oxygen and excess of carbon dioxide. Such conditions are due generally to odors. Odors may produce unpleasant physiologic or psychologic results. A movement of air, especially on the face, has a stimulating effect. Perhaps the difference which many experience between a June day out-of-doors and the same June day produced indoors by air conditioning may be due in part to a consciousness of air movement outside. Of course, drafts are to be avoided since too rapid removal of heat or other physiologic reactions may occur which may be conducive to head colds. Furthermore, and from a practical standpoint, *adequate insulation* and *air circulation* will do much to keep patients, doctors and attendants comfortable in the hot periods (which are only occasional in the northern states). Especially is this the case through the use of adequate fans, installed in the attic or upper portion of a building, which may be operated throughout the night, drawing in the cooler air from the ground, thus cooling the walls and portions of the building not otherwise air conditioned in any respect.

The use of large fans, moving many cubic feet of air a minute, with closure of windows and other out-of-doors communications during the day will aid much in comfort cooling. Also, it might be stated that insulation is one of the most important items of air conditioning: proper insulation keeps the heat in during the winter and the heat out during the summer. Somewhere I have seen an account of the experience of a hospital in Charlottetown, Prince Edward Island, in which, subsequent to the special insulation that was made, it was reported that the hospital's cost for power, light and heat was $32 a bed per year as compared to an average cost of $106 per bed per year in New York City in twenty-three large hospitals.

Filtration

Circulation of filtered air is highly desirable

especially when hospitals or clinics are located in urban centers or near large industries where the dust count may be high. Elaborate methods are necessary to remove all particulate matter, but one-half to two-thirds may be removed by the installation of suitable screens which may be inserted both at the points of entrance of outdoor air and of exit into the room. Especially is this double precaution necessary in connection with air circulation to and from operating rooms and in rooms for allergic patients.

Electrical ensembles for precipitating dust and bacteria are now being built and installed in some hospitals; these are quite efficient in removing dust, bacteria or spores, since all these material particles are electrically charged (usually negatively) and can be drawn to one or the other of the plates of a highly charged condenser.

Among the reasons which may be cited why filtration may need more than casual attention are: (1) filtration provides great relief in many conditions of respiratory allergy, (2) infecting organisms are carried quite commonly on particulate matter suspended in the air, hence the desirability of the removal of such matter, and (3) silica dust, soot, carbon granules and so forth may constitute a hazard in industrial areas in which hospitals may be located. Of course, the smoke nuisance and hazard, as it exists in some of our large cities, is a problem which can be solved most efficiently at the sources—the belching, vomiting chimneys —when the public becomes sufficiently aroused.

Heating and Humidification

Automatic control of central heating, preferably supplemented with automatic control for each room used for hospital patients, is necessary if air conditioning is to be provided. Different parts of the hospital will require different dry bulb temperatures and different humidities. The operating rooms should be maintained at a high minimal temperature and a relatively high humidity (say 82° F. and 50 per cent relative humidity) whereas a ward devoted to patients convalescing from tuberculosis may be maintained considerably below the level of ordinary comfort.

The problems of humidification in the winter months and dehumidification in the summer months have received much attention. Many statements of a somewhat conflicting character are found in the literature and rehearsed in lectures. It is commonly stated that the humidity in homes, offices, schools, clinics and hospitals should be maintained at 40 per cent throughout the year, since this is healthy and presumably beneficial. In these northern climates, a winter humidity of over 20 to 25 per cent is not feasible because of condensation on outer walls and windows, as well as the possibility and probability of destruction of walls of buildings owing to condensation of moisture. Obviously, the amount and character of insulation play a role. And there are certain illnesses in which higher humidities should be maintained. In cases in which this is necessary, inner rooms with local control of heating and humidification should be used. A relative humidity of less than 30 per cent is considered by many to be too dry, since this represents approximately the conditions in the desert during fair weather. Many engineers recommend a partial humidification of 20 per cent which may be increased when the winter weather is not severe. Water may be added as sprays to the circulating air; evaporating pans on radiators are generally ineffective or inadequate.

Cooling and Dehumidification

In the triteness or, perhaps more accurately, the slang of expression of the street, it may be said that two fellows get us down in the summer time: "General Debility" and "General Humidity." The expression of the street emphasizes the normal lassitude of hot weather and the discomfort and incapacity caused by relatively low dry bulb thermometer readings with high humidity. For the moment I will contrast experiences and feelings in the Imperial Valley of California under 100° F. in the shade and a relative humidity of 5 per cent or thereabouts on a summer's day, with Winnipeg, Manitoba, again on a midsummer's day, with a dry bulb of 83° F. and a relative humidity of 90 per cent. To be sure, I was hot and somewhat uncomfortable in the dry heat; I sweat but the sweat evaporated immediately. But just the opposite occurred under the condition of high humidity, although the dry bulb temperature was not excessive. So as we approximate conditions that may evoke sweating, we need to have regard for the dry bulb reading, relative humidity and air movement. The engineers have given us an effective temperature scale or index. This is defined as that "scale of thermoequivalent conditions which not only indicates the sensation of warmth, but also determines the physiologic effects on the body induced by heat or cold."[9]

An effective temperature of 72° F. is equivalent to a dry bulb of 83° F. and a relative humidity of 20 per cent; a dry bulb of 78° F. and a relative humidity of 50 per cent; or a dry bulb of 75° F. and relative humidity of 80 per cent, for example. These conditions are said to be physiologically comfortable and to give an equal sensation of warmth and comfort. As the temperature of the atmosphere in which the body normally sweats is approached, then the higher the relative humidity

of the atmosphere the lower the dry bulb temperature must be if the body is to maintain its exchanges of energy with the environment chiefly through the medium of radiation under vasomoter control. But many disagree with the statements regarding effective temperature except in the region in which evaporative regulation on the part of the body is the main or controlling process of heat dissipation. But it is agreed that higher dry bulb temperatures may be maintained if the humidity, which often mounts to very high percentage in the summer months, is reduced. All things being equal, a temperature of 75° to 80° F. and relative humidity of 25 to 40 per cent seem to me to be ideal all-the-year round conditions for hospitals.

It is frequently stated that the summer differential between out-of-door and indoor conditions should not exceed 10° or even 5° F. This would seem to be adequate for almost all conditions. Furthermore, the cooling system installed need not be as large and as expensive as first recommended. However, these differentials between outside and inside temperatures are of relatively little concern to the patient who is housed for some time under hospital care. From my own observations on normal subjects and those with peripheral vascular diseases I should recommend a temperature of 78° to 82° F., depending on whether summer or winter conditions are present, the value of the basal metabolism and so forth.

In general, there is a tendency to overcool operating and convalescing rooms whenever air conditioning is installed just as there was a tendency some few years ago actually to produce in the moving picture theater the conditions which would be produced by cakes of ice and polar air, to say nothing of the polar bears, exhibited on the banner stretched across the main entrance. But, on the other hand, extreme hot weather is a serious extra load to impose on a patient who is already ill; this is particularly true of elderly people. And it should always be remembered that a sick organism differs in many particulars from a well organism in its requirements and needs.

Air Conditioning—For Whom?

Dr. C. A. Mills, professor of experimental medicine, University of Cincinnati, has conducted a series of studies on the relationships of climatic and weather conditions to health. In writing about winter air conditioning he stated[12]:

> "Two radically different groups must be properly conditioned by the same atmosphere: the sick patients who are unduly sensitive to chilling, and the doctors, nurses, and orderlies who care for them. Should the building be heated for the inactive and easily chilled sick or for the healthy working group? Surprisingly enough, it seems advisable to condition in this case for the well people. Overheating for the busy nurse and orderly is harmful and they have no method of relief at hand but the wearing of light clothing. The patients, however, always have the privilege of extra blankets to cover most of the body. General winter standards for hospitals should be much the same as for office buildings.
>
> "With summer cooling quite a different situation exists. The sick in bed lose half their effective heat dissipating surface because of direct contact with the mattress. Many have fever and dissipate more than normal heat. In summer it is for the patient for whom cooling facilities should be adjusted."

In winter the standards should be 75° to 78° F., in general, with the humidity 25 per cent or better depending on the severity of the outdoor weather. This will be acceptable to patient, doctor, and nurse. In summer, the dry bulb temperature should be kept relatively high and the relative humidity relatively low, such as 80° to 83° F. and relative humidity reduced below 50 per cent. This will afford comfort to patient, doctor, and nurse.

However, there is a third group to be considered in addition to the patient, the doctor, and hospital attendants, namely the relatives of the patient. As a group, relatives are inclined to be very exacting. Frequently, therefore, the rooms of convalescents will be thought to be too cool in the winter and too warm in the extreme conditions of summer weather by relatives and friends of the patient. While, therefore, the medical profession and hospital authorities may need instruction in matters concerning air conditioning, it is certainly true that the public at large believes that, in those things that concern sickness and the sick, there is nothing too good and they forget that the patient, as such, has nothing much else to do than to rest and relax, hope for a speedy recovery and an early return to life's work. So it might be a good arrangement in every hospital to provide some sort of a "pre-conditioning" room for visitors and relatives. Then a temperature of 85° F. in a convalescent ward would seem very comfortable after coming out from 95° in the shade.

Special Air Conditioned Services

In concluding this portion of my paper I shall comment on what I believe to be optimal conditions in operating rooms, nurseries, and maternity wards, and in rooms to be occupied by allergic

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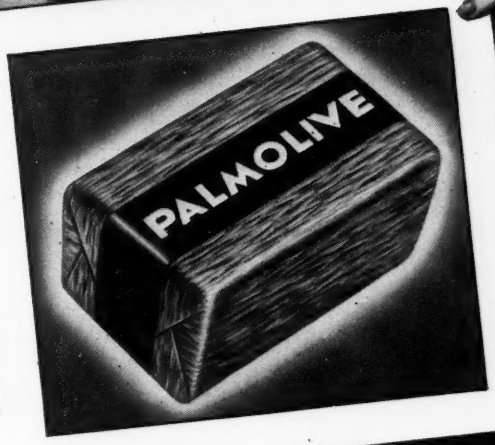

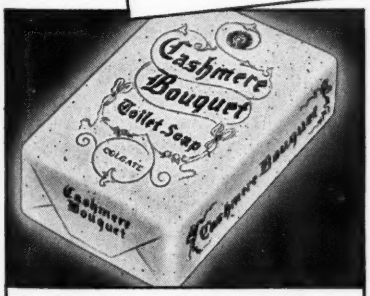

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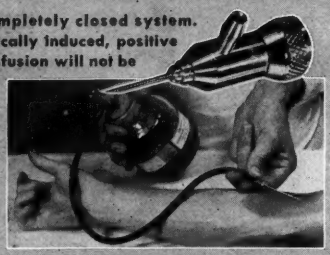

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patients, and those suffering from rheumatism and from peripheral vascular diseases.

Operating room—There are several considerations which must be borne in mind in the air conditioning of operating rooms:

1 The surgeon and his staff should be able to work under such conditions as will afford comfort. Temperature and humidity should be maintained at such levels as will avoid sweating and the possibility of operative contamination.

2 The inefficiency of the patient's mechanisms for heat regulation, especially under ether anesthesia, may cause patients in operating rooms to suffer adverse effects from either abnormally high or low temperatures. However, the period of time spent in the operating room is generally short, especially as compared to the time spent in convalescence; hence the greater stress is to be placed on the air conditioning of patients' rooms.

3 The danger of explosion of anesthetics is much reduced if the humidity is maintained as high as 50 per cent.

4 The operating room should be supplied with well filtered air which should be renewed some ten to fifteen times an hour, with little if any recirculation. Each operating room should be equipped and maintained as an independent unit.

With these facts before us, it is evident that the dry bulb temperature of the operating room should not be lower than 78° to 80° F. with a relative humidity of about 40 to 50 per cent.

Nurseries—Air conditioning seems to be highly advantageous for infants. When one considers prematurely born babies, it is obvious that some artificial means must be supplied on account of the improper temperature as well as the low metabolic rates of infants. In general, nurseries should not be maintained at temperatures lower than 75° F. nor at temperatures higher than 90°F. except for premature infants, when a temperature as high as 98° F. may be necessary. Relative humidities should be high. Fairly recent studies at the Boston Infants' Hospital show how important humidity, ventilation and cooling in hot weather can be in saving lives. Dr. Yaglou,[20] director of Industrial Hygiene in the Harvard School of Public Health, stated that "in nurseries for normal infants, there seems to be little need for year round air conditioning, although some provision should be made for ventilation and cooling excessively warm rooms."

Allergic patients—Heated rooms with double or triple filtration of washed air are much to be desired. For patients with hay fever and asthma

the air must be free of pollen. Comfortable temperature and humidity are definitely beneficial. Extremes of heat or cold, humidity or drafts must be avoided since they are likely to initiate or aggravate symptoms.

Peripheral vascular disease — An extensive series of investigations regarding the role of the extremities in the control and regulation of the dissipation of heat in persons with normal circulation of the blood and in cases of peripheral vascular disease has been carried out during the past five years by the group[13, 14, 15, 16] interested in this subject at the Mayo Foundation and the Mayo Clinic.

In brief, it may be stated that, through the use of controlled air conditioning, it is possible to determine the atmospheric temperatures at which the extremities may exhibit some degree of vasodilatation in peripheral vascular disease. The temperatures of the toes of the normal subject under an environmental temperature of 78° F. may vary from values a few degrees below to values at or above the surroundings. The temperatures of the fingers in different individuals range from normal values (90° to 94° F.) to temperatures indicative of pronounced vasospasm of the peripheral vessels of the upper extremities. Atmospheric conditions may be found under which considerable dilatation of the peripheral vessels occurs in functional vasospasm. In general there will be corresponding changes in the temperatures of the toes commensurate with the values found in normal subjects, although conditions are encountered in which there is evidence of tissue heating only, with but little vasodilatation of the blood vessels. In organic occlusion of the lower extremities with some superimposed spasm, environmental temperatures may be established in which the lower extremities will be normally dry and in which the temperatures of the toes will be above the atmospheric temperature, thereby indicating increased blood supply. This range of environmental conditions varies with the degree of vasospasm but may be set at 80° to 86° F. Therefore, in differential diagnosis and in the treatment of peripheral vascular diseases it is essential to have air conditioned rooms with a range of temperatures from 70° to 90° F., controlled to within 1° to 2° of temperature and 3 to 5 per cent of humidity.

Costs of Installation and Operation of Air Conditioning

Assuming, therefore, for the moment, that the case for air conditioning of hospitals, in part at least, in so far as operating rooms, nurseries, allergic and other special services are concerned, has been favorably presented and that "doctor,

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lawyer, merchant, chief" and so on ad infinitum through the scientist, the engineer and even unto the public at large are in agreement, the ever prevalent questions then arise: What will it cost? Can we afford it or can we afford to do without it? How can we make the ledger balance? For clinics and hospital managers and their assistants, philanthropic and kindly as they may be, still cannot play the role of the great white father, Santa Claus, or benefactors at large, since it is still necessary to operate with a balance on the black ink side of the ledger.

The literature concerning hospitals and hospital management contains several articles which have appeared during the past two or three years regarding costs. I am giving references to a few of these articles.[2,12,17] Obviously, the cost of installation and operation of air conditioning depends on the building, the present installation of air circulation, the out-of-door climate as a year round proposition, and the degree and distribution of air conditioning desired. Some figures for Minnesota for a complete installation of air conditioning show:

1 In a 100 bed hospital, with the top floor of its five stories devoted to operating and other service rooms, the fourth floor devoted to nursery, delivery rooms and associated service rooms, and the second and third floors given over to patients, and the first floor concerned with administration, the cost of air conditioning was about $30,000, which provided 85 to 90 tons of cooling, with a cost per bed of $300.

2 In a 20 bed hospital, completely air conditioned, including all service rooms, which provided about 13 tons of cooling, the total cost of installation was $6300, hence a cost of about $310 per bed.

The Corey Hill General Hospital in Brookline, Massachusetts, with sixty beds, invested $26,000 in air conditioning equipment for 200,000 cubic feet of conditioned space, equivalent to 13 cents per cubic foot or $433 per bed.

William E. Malin in *Skyscraper Management* (quoted in article by C. F. Neergaard[12]) reported in a review of forty-two commercial buildings:

> "Twenty-two in smaller installations had under 100 tons (average 32.9). The average area cooled per ton capacity was 380 square feet of rentable space; the average cost installed was $428 per ton, equivalent to $1.13 per square foot; the operating and owning costs (interest and depreciation) 17.7 cents and 13.4 cents, or a total of 31.1 cents. A square foot of rentable area is equivalent to 19 cubic feet of building and, if air conditioning is installed during construction of the building, it will add about 8 cents per cubic foot to the cost."

What about costs in hospitals? A survey of costs in the case of a New York State hospital, with 133 beds and 750,000 cubic feet, shows that the cost of the building was about 70 cents per cubic foot or about $4000 per bed; cost of heating and ventilation $375 per bed. The cost of air conditioning involved about 50 tons of refrigeration or $20,000, equivalent to about $150 per bed. When it is recollected that only about 30 per cent of the hospital is what may be referred to as "rentable space," that there must be twenty-four hour service, that there is rather constant traffic in and out of rooms, general air conditioning of such a hospital would add about $30,000 to $35,000 to the bill or about $200 per bed to the cost of heating and ventilation of $375 per bed. The cost of operation would amount to almost $66 per bed per year, or 18 cents per bed per day.

As to how these increases in installation and operating costs may be met I am quoting the remarks of Ancel Keys[10] to this effect:

> "To amortize the investment, to cover operation, to provide for deterioration an appreciable increase in the income per bed is necessary. This is not very great, however. With 80 per cent occupancy of the hospital an increase of 50 cents per day in the charge per bed might be ample, unless it is felt imperative to recover quickly the capital outlay on the installation."

In closing, I should like to point out again that during the past five years the design of the air conditioning unit for use in individual rooms has improved greatly and the cost cut from a quarter to a half of former prices. These units can be so attached as to supply cooled, filtered air with dehumidification in the summer months, and winter heating (with some accessory units at present for humidification). Operating rooms and special services may be run on general systems of cooling, but these must be supplemented and controlled, each room independently of all other rooms, with auxiliary systems or units to take care of temperature, humidity, air circulation, and removal of dust and bacteria.

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A New Ventilating Inlet

Body physiology is the necessary starting point in all considerations of air conditioning for human comfort. The body is in effect a furnace burning food as fuel and regulating its temperature by a heat loss through the skin as a radiator. This heat loss is about 400 Btu. per hour, about 75 per cent a plain temperature loss, and 25 per cent by the evaporation of moisture (perspiration). As the temperature of the surrounding atmosphere rises the rate of evaporation loss increases with it. Bodily comfort depends upon the maintenance of a proper differential between the temperature of this air blanket and that of the skin. The maintenance of this differential is in turn a question of the integrity of the blanket and of its rate of heat loss to the surrounding air.

This air blanket can lose its heat in three different ways: by convection (air currents passing it); by radiation (direct heat loss to surrounding objects); and by evaporation of its contained moisture.

Since this aerial blanket covers the whole body, and since the heat control mechanism is central, any local interference with the integrity of the heat blanket will result in an inequality of its effectiveness as between the point of interference and the other part of the blanket. Such local disturbance of the integrity of the blanket results in what is spoken of as "feeling a draft," and creates not only a feeling of discomfort, but a definite health hazard as well.

A new principle in the design of the inlet grill is the use of a grill so designed that the air is injected into the room at such even velocity that it fills the room by displacement rather than by velocity. This results in the desired uniform distribution without air currents or drafts.

The effect is secured by the use of an outlet area in every way comparable with and indistinguishable from a perforated type acoustical treatment material applied to twelve to fifteen per cent of the ceiling area. The velocity of the incoming air is reduced by the use of plenum chamber and is further reduced by the air foil effect of the proportionately large areas of solid material between adjoining perforations.

There is some evidence that these perforated panels, by assuming the same temperature as the incoming air, may also produce a desirable amount of panel heating. Also due to the small differential between the incoming air and the room air, it is possible that the same panels may be utilized in summer as cooling panels.

Economic Material for Poultices

ELEANOR A. WINTER, M.A., and MONROE A. McIVER, M.D.

EACH year many tons of flaxseed meal are used for poultices in large hospitals—one New York hospital alone having used approximately 7500 pounds during 1940. Flaxseed is relatively expensive, and, since our supply may be affected by the war because a considerable amount is imported, it occurred to us that it might be desirable to find a more economical and constantly available substitute which would retain the essential useful characteristics of flaxseed meal. These characteristics are described in the pharmacological literature as the power to absorb water and retain heat, together with the ability to produce a demulcent mass, light in weight, when treated with hot water in appropriate quantity.

Substitutes for Flaxseed Meal

In the search for a suitable substitute, the following relatively inexpensive materials were investigated in this laboratory: soy bean meal, corn meal, cottonseed meal, and wheat bran. In testing these substances a poultice was made according to the usual hospital procedure, using 3 cups of dry meal and 1 teaspoonful of sodium bicarbonate to 1 quart of boiling water. The wet mass was spread upon a sheet of muslin, covered with a layer of gauze, and folded over upon itself. All temperature measurements were made with a laboratory mercury thermometer, the dry bulb being inserted centrally between the two layers of the poultice.

The results, summarized in Table I, were as follows: It was found that soy bean meal absorbs

From the Surgical Research Laboratory of the Mary Imogene Bassett Hospital.

The Author

● Eleanor A. Winter and Dr. Monroe A. McIver are members of the Research Laboratory Staff of Mary Imogene Bassett Hospital, Cooperstown, New York.

TABLE I

Comparison of the physical properties of the different types of meal and of the poultice mixture

Type of Meal	*Weight of 1 Liter*	*Power of Water Absorption*	*Heat Loss in °C. in 70 Minutes After Mixing*	*Comments*
Flaxseed Meal	444 g.	+++	29°	Demulcent Characteristic odor objectionable to some people Buoyant when wet
Soy Bean Meal	724 g.	++++	25°	Objectionable odor Buoyant when wet
Corn Meal	744 g.	++	23°	
Cottonseed Meal	808 g.	+++	27°	Non-demulcent Characteristic odor not usually objectionable Buoyant when wet
Wheat Bran	280 g.	+	31°	Non-odorous Light in weight
Poultice Mixture (Equal parts by volume of Flaxseed Meal, Cottonseed Meal and Wheat Bran)	618 g.	+++	29°	Demulcent Characteristic odor not usually objectionable Buoyant when wet

a tremendous quantity of water, but when treated with hot water has a strong odor which might be objectionable. This meal was therefore discarded. Corn meal retains heat well, but when wet forms a compact, inflexible, heavy mass; and since it appears to have no unique advantages, it also was set aside. In cottonseed meal many useful qualities were found. It closely resembles flaxseed meal in many respects. It retains heat equally well, has the same property of expanding into a rather buoyant mass when mixed with hot water, which it absorbs nearly as readily, and has a more agreeable odor. It does not, however, possess the same demulcent consistency when wet, and is about twice as heavy. To obviate these difficulties, a mixture of cottonseed meal and flaxseed meal was tried and a poultice material produced that was sufficiently cohesive and flexible but was still too heavy. This defect was partially overcome by adding wheat bran to the mixture, for while the bran does not absorb liquid well and is stiff and inflexible when wet, so that it is of little use alone, its lightness of weight and lack of odor make it very useful in conjunction with flaxseed and cottonseed meal.

A Good Poultice Mixture

A mixture composed of approximately equal parts by volume of flaxseed meal, cottonseed meal and wheat bran, was thus found to have physical properties which make it compare favorably with flaxseed meal alone for poultices. Clinically, it has been in use at this hospital for some time; the nursing staff has found no objectionable qualities* and considers it in every way a satisfactory substitute for flaxseed meal. Its cost is a little less than half that of flaxseed meal. While there is no difficulty in mixing the three constituents, it is possible that if there were a sufficient demand, some of the larger supply houses might be interested in offering such a poultice material ready mixed.

TABLE II

Comparison of prices of flaxseed meal and poultice mixture. It will be noted that the mixture costs approximately half as much as the flaxseed meal at current prices

Type of Meal	*Current Price Per Hundredweight*	*Quantity Used*	*Price Per Hundredweight*
Flaxseed Meal	$7.00	100 lbs.	$7.00
Poultice Mixture			
Flaxseed 25%	$7.00	25 lbs.	
Cottonseed 55%	2.20	55 lbs.	$3.28
Wheat bran 20%	1.60	20 lbs.	

*The fact that cottonseed meal stains the linen more deeply yellow than does flaxseed is of no real importance, since the stain comes out readily in the course of ordinary laundering.

Enriched Flour

The process of milling wheat for the production of white flour results in the loss of a large part of the vitamins and minerals so necessary to proper nutrition.

The Committee on Foods and Nutrition of the National Research Council has proposed standards for the so-called "enriched" flour which seek to preserve or restore the more important of the vitamins and minerals without undue discoloration of the flour or bread.

These standards would require in the finished product specified amounts of the vitamin, thiamin (B_1), and nicotinic acid, and one mineral—iron. They permit but do not require two other vitamins —riboflavin and vitamin D, and two minerals—calcium and phosphorous. There is a probability that as finally adopted the riboflavin content may be required rather than permitted.

There are three methods of producing "enriched" flours—

1 By adding the recommended amounts of vitamins and minerals to white flour

2 By special methods of milling, which preserve the required amounts of vitamins and minerals

3 By combining the two methods, saving part and adding the rest

The flour made by special milling is to be preferred despite the fact that it is slightly darker. This type may not be on the market as soon as the other types.

The addition of the required vitamins and minerals does not alter its taste or appearance.

Recipes do not need to be changed for use of the white flour which has been enriched, but may require some adjustment in case of the specially milled flours. In using any of these flours the amount of soda should be kept at a minimum, as any excess is destructive to the vitamins.

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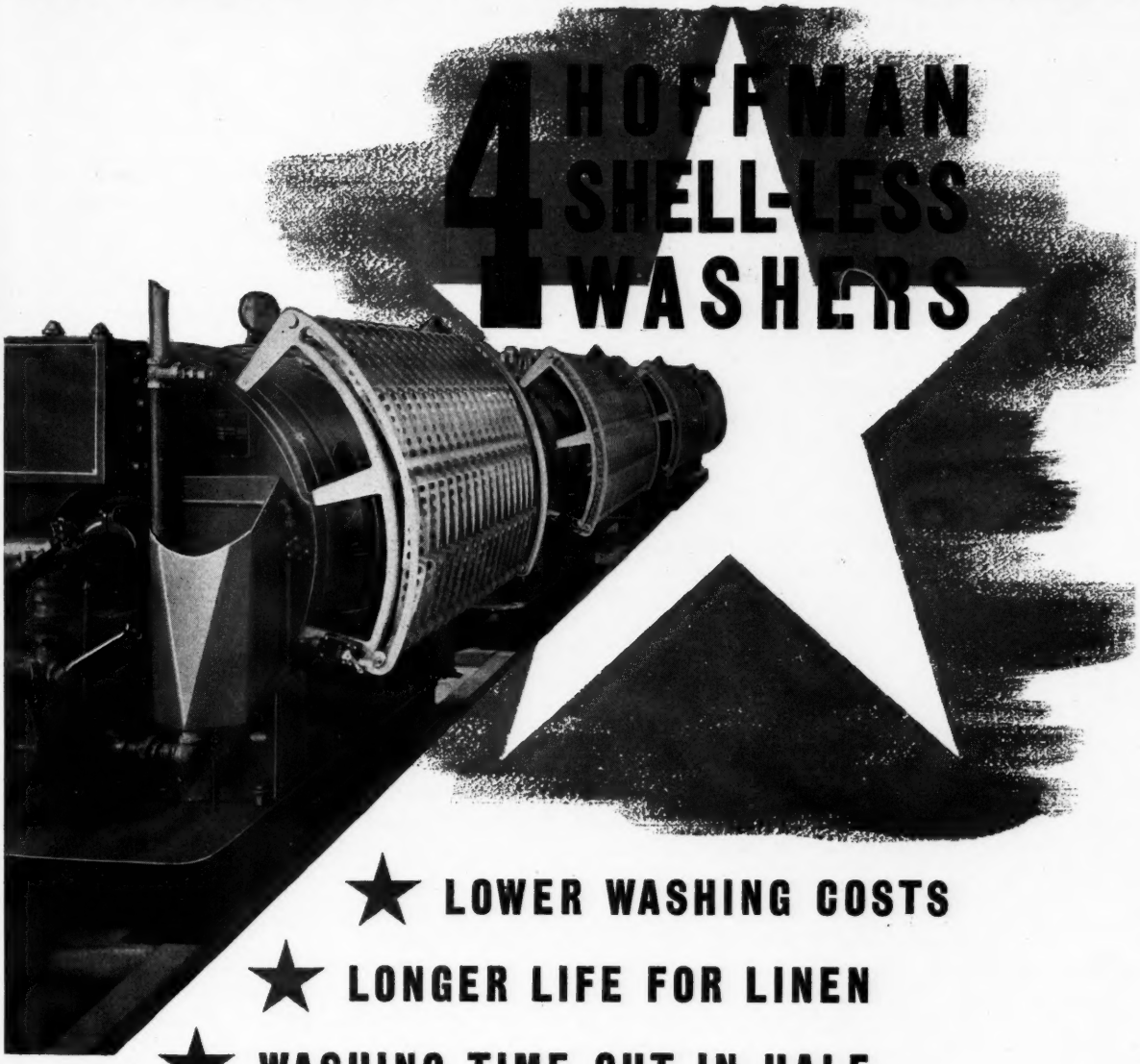

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PLAGUE ON US. Geedes Smith. The Commonwealth Fund, New York. 1941. $3.00.

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The various epidemic diseases are first discussed from their historical viewpoint, then analyzed from the scientific viewpoint. The skill with which the scientific is simplified to the easy comprehension of the layman permits a graphic story that is readable with the ease and interest of a novel, and the respect of scientific thesis.

The author does not stop with the present proved facts of epidemiology and communicable disease, but ventures somewhat into the realm of the speculative as to the future—speculative as far as the realist is concerned but as logical as many of the theories which have led to the solution of problems of disease in the past, and which are still guiding the studies of those who are today devoting themselves to the greatest romance on earth—the romance of research into the causes of human ills.

A PRACTICAL SURVEY OF CHEMISTRY. Walter S. Dyer. Henry Holt and Company, New York. 1941. $2.80.

The author presents the subject of chemistry as a cultural rather than as a dry as dust sequence of formulas and reactions.

Beginning with the background of chemistry, the classification of elements, and a discussion of the combinations we deal with most—air and water—he leads the reader by a gentle progression through the simpler to the more complex compounds of each of the major groups from salt to fuels, soaps, vitamins and hormones.

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Each chapter closes with a summary, well-chosen review questions, and well-selected reading references.

The author presents a survey which will be valuable alike to the youngster who wishes a broad picture of chemistry as the key to all the physical sciences, to the oldster whose memory of chemistry is a nightmare of structural formulae marked less by its demonstrated facts than by its gaps, and to the researcher in biology or physics or chemistry whose path is so narrow and winding that he is likely to lose his sense of direction.

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200 WAYS TO CONTROL FOOD COSTS IN QUANTITY COOKERY. J. O. Dahl. The Dahls, Stamford, Connecticut. $1.00.

This little handbook by the editor of *Hotel Management* presents the results of twenty-five years of experience in controlling the cost of foods without decrease in quality or service. It contains a large number of tables and descriptions of methods of judging and storage of raw foods, methods of preparation and cooking, expected yields and the principles of cost control as applied to menu making.

PUBLIC HEALTH AND HYGIENE—A STUDENT'S MANUAL. Charles Frederick Boldnan, M.D., and Nils W. Boldnan, M.D. W. B. Saunders Company. Third Edition, 1941. $2.75.

THE PHARMACOLOGY OF ANESTHETIC DRUGS. John Adriani, M.D. Charles C. Thomas, Springfield, Illinois. Second Edition, 1941. $3.50.

The author presents a very comprehensive and clinically complete review of the action of all the accepted anesthetic drugs. Their action is dramatized by references to a schematic drawing of the body with reference to the action of the drug under consideration to each vital organ, drawings of the constituents of the blood showing their

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PLAY FOR CONVALESCENT CHILDREN IN HOSPITALS AND AT HOME. Anne Marie Smith, A. S. Barnes and Company, New York. 1941. $1.60.

SIMPLIFIED NURSING. Dakin and Thompson. J. B. Lippincott Company. Fourth Edition, 1941. $2.00.

This book has been revised to bring it up to date for the training of the mother and of the practical nurse.

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A text which has continued through twelve revisions and a period of thirty-seven years requires no further comment except that it is still up-to-date both in scientific content and in textual arrangement.

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The author draws on his many years of teaching nurses as a guide to a very clear and simple presentation of a very difficult subject. Each chapter is followed by a comprehensive set of references and the entire book is well-indexed.

FIRST AID IN EMERGENCIES. Eldridge L. Eliason, M.D. J. B. Lippincott Company. Tenth Edition. 1941. $1.75.

This handy pocket size manual contains a very complete description of the major signs and symptoms of all common injuries, poisonings, and similar emergencies, together with the principles and details to be observed in the first aid treatment. The text is in language easily understood by the layman and cuts are freely used to illustrate the typical signs and methods of treatment. In the case of plant poisonings, the various plants are illustrated to assist in the diagnosis.

The entire book is well indexed in terms commonly used by the layman.

THE HEART IN PREGNANCY AND THE CHILDBEARING AGE. Burton E. Hamilton, M.D., K. Jefferson Thomson, M.D., and Frederic C. Irving, M.D. Little, Brown & Company, Boston. 1941. $5.00.

This book, as the title implies, goes very fully into the care of the cardiac during pregnancy, with a special chapter on the care of the cardiac during delivery and the puerperium.

The text is reinforced by many pertinent case histories and a very comprehensive bibliography. It should find a place in every obstetrical as well as medical library.

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PROGRAMS FOR DENTAL HEALTH. National Health Program Committee; Harold W. Appice, chairman. American Dental Association, Chicago. 1941. Gratis.

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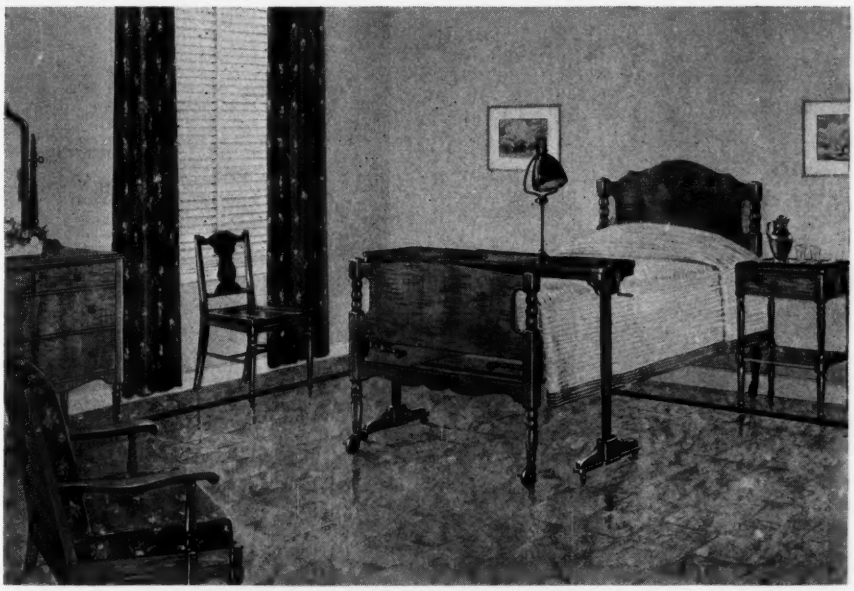
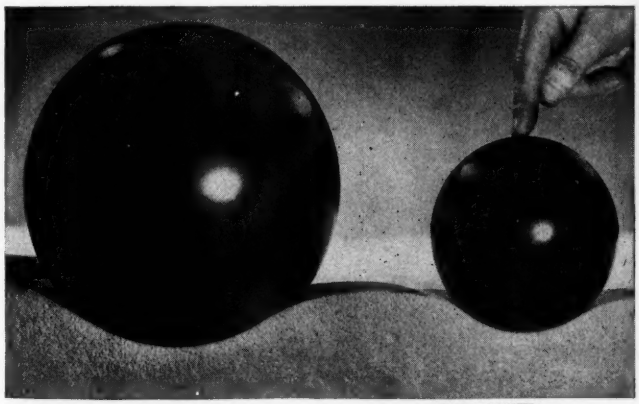


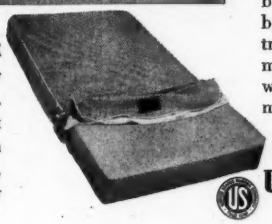
HILL-ROM FURNITURE
FOR THE MODERN HOSPITAL

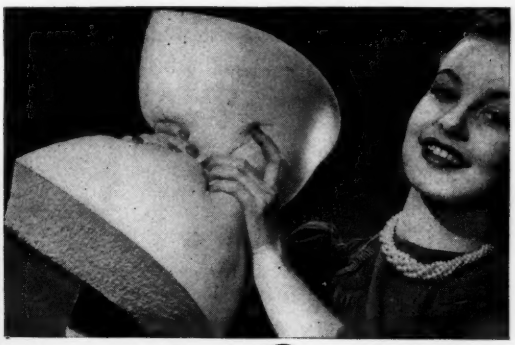
A MORE RESTFUL MATTRESS FOR YOUR PATIENTS (and you, too!)

Koyalon combines both softness and springiness in a single material. It replaces old-fashioned mechanical parts and padding with one sag-proof, molded unit—supports the body more completely and evenly—and holds its new shape and comfort years longer.



HERE'S HOW *Koyalon* WORKS FOR BETTER REST—These bowling balls show how perfectly Koyalon adjusts itself to different weights. Weights that could be head, shoulders, hips. Correct support for each part of the body makes Koyalon more restful. Koyalon supports more *completely*, too. Because it shapes itself exactly to every body contour.





THIS IS *Koyalon*

—the pure latex foam that has improved mattress comfort and wear in leading hospitals and thousands of homes. Not to be confused with so-called "sponge" rubber, Koyalon is both odorless and *air-breathing*. It is penetrated throughout by millions of *connecting* pores, which air the entire mattress, and make thorough sterilization easy. Koyalon is milk of rubber trees, with its natural freshness preserved, whipped into foam, then baked to permanent shape. Also molded into pillows and all types of hospital cushions.

ESPECIALLY HELPFUL TO ALLERGICS—
hairless, lintless, dustless!

UNITED STATES RUBBER COMPANY
ROCKEFELLER CENTER • NEW YORK

A Page of News About Advertisers in *HOSPITALS*

"Every man has two educations—that which is given to him, and the other, that which he gives to himself."

"WHATEVER EXPANDS the affections or enlarges the sphere of our sympathies elevates us in the scale of being," is what comes to mind when we read a special booklet published by The American Laundry Machinery Company, to do honor to Mr. Frank A. Gaul, President of the Canadian organization on his fiftieth year with the corporation. It demonstrates the fine spirit existing in this firm which serves our hospitals so capably.

COOPERATIVE BUYING down through the centuries brings its advantages to individual purchasers. A good example is shown in the news that Hospital Bureau of Standards and Supplies, Inc., New York, has completed agreements with the Fleet Sales Divisions of the Ford Motor Co. and the General Motors Corporation whereby a three per cent return on the purchase price of new cars is made available to member institutions, conditional upon a minimum of twenty new passenger cars, trucks, station wagons and ambulance chassis being bought direct from authorized dealers within a 12 month period. The agreement covers not only cars, trucks, etc. bought by the institutions themselves, but also purchases by individual members of the staff. The makes covered are Ford, Mercury and Lincoln Zephyr for the Ford Co., and Chevrolet cars and trucks, Pontiac, Oldsmobile, Buick and Cadillac for the General Motors Corporation.

THE JULY issue of the American Journal of Nursing will carry the significant highlights of the annual meeting of the National League of Nursing Education held in Detroit, May 26-30. Reports of refresher courses, and the announcement of the opening of The Red Cross Training Course for College Women at Bryn Mawr College, are important evidence of the methods devised by the profession to meet the nation's need for nurses.

ANN RIDLEY WOODWARD of Aznoe's-Woodward Medical Personnel Bureau tells us that not in many years have they received so many attractive opportunities as are now being listed daily. If anyone is seeking a position or considering making a change, she says it would certainly be well for them to register because she feels confident that she can place them most satisfactorily without delay.

THEY SAY we are less convinced by what we hear than by what we see. A new product of outstanding merit announced by Mr. Levernier of Huntington Laboratories demonstrates how walls can be washed without any chance of streaking. It is known as "Spal," a liquid to be mixed with water, sixteen parts water to one part Spal. It removes all the soot, grease and dirt quickly.

TO KEEP PACE with the expanding list of uses to which it is being put, United States Rubber Company, whose advertising is in this issue, has announced a new name, Koyalon, and a greatly expanded advertising and consumer education program for its product formerly known as U. S. Royal Foam.

The material is made of milk from rubber trees, whipped into foam and actually baked in special molds. It is odorless, light and flexible, with a cellular construction made up of millions of interconnecting pores. By volume the material is eighty-five per cent air spaces and fifteen per cent rubber.

THERE IS a new model G-E Photo-Roentgen Unit. This is the apparatus that photographs the fluoroscopic image of the chest on a 4 by 5 inch film, makes photoroentgenography a faster, more economical, and even more accurate tuberculosis case-finding procedure. A diagnostic x-ray tube unit is incorporated which moves the camera assembly and is always properly aligned with the patient. Widely used for group surveys, hospital usage for the G-E Photo-Roentgen Unit includes tuberculosis sanitoria, for periodically checking in-patients or patients discharged for follow-up examinations, and in general hospitals, for routine chest examinations of every patient admitted.

STILBESTROL is a new synthetic substance not related chemically to the natural estrogens, but possessing their essential pharmacological and therapeutic properties. It is recommended for the control of menopausal symptoms, for the relief of senile vaginitis, for the control of gonococcal vaginitis in children, and for the prevention or relief of engorgement of the breasts during suppression of lactation postpartum. Physicians will welcome this new therapeutic measure. Stilbestrol, Lilly, is supplied in Ampoules, 'Enseals' (Enteric-Sealed Tablets, Lilly), Tablets, and Suppositories.

A CONSTANTLY increasing number of hospitals are furnishing private room patients with wrapped, milled toilet soaps in individual sizes. Palmolive and Cashmere Bouquet Soaps, for example, are available in a variety of individual sizes from one-half to two ounces. The Colgate-Palmolive-Peet Company is prepared to supply specially printed wrappers bearing the name of your hospital or crest.

COMPLETE "bumpering" of furniture in your hospital prevents ruining walls. Hill-Rom Company has solved the problem with two types—one is white rubber, the other a cloth bumper. Both of these are ideally suited for straight chairs, easy chairs, rocking chairs, dressers and tables and for general use throughout the hospital where furniture comes in contact with walls and needs to be bumpered. The cloth bumper is the screw type and is actually a rubber bumper with the cloth covering. It comes in assorted colors and is not expensive for complete bumpering. The white rubber bumper is desirable where sharp edges need to be bumpered.

TO CUT THE annual hypodermic needle bill as much as forty to sixty per cent, and at the same time provide sharper needles is something claimed for the Tomac Perfect Point Needle Sharpener offered by American Hospital Supply Corporation.

It puts a razor-keen point on the dullest hypodermic needle in a few seconds and sharpens any size, shape, or make. It saves the money spent on special bevel needles as it produces any desired bevel.

Foolproof, simple and easy to operate, anyone in a central supply can operate it. Repointing is effortless, for the drudgery and inefficiency of hand grinding are eliminated. Never needs oiling. Handy black leatherette carrying case—A. C. or D. C.

THE IMPORTANCE of adequate lighting for the surgeon cannot be overemphasized. The Operay Laboratories division of the Scanlan-Morris Company, Madison, Wisconsin, has devoted many years to the study of surgical lighting. The most recent development is the use of Multivex lenses in the projector of the Operay Multibeam. These new lenses provide an unusually high percentage of visible light transmission. The lens structure concentrates the light rays in the center of the beam, thereby increasing light intensity by more than a hundred per cent.

AN UNLIMITED NATIONAL EMERGENCY

The National League of Nursing Education was assembled in its 47th annual Convention when President Roosevelt made his historic pronouncement.

The AMERICAN JOURNAL OF NURSING for July publishes a cross section of the democratically conducted discussions which will interest the administrators of all types of nurse-employing institutions. Among the major topics discussed were:

Preparation & Supervision of Non-professional Workers

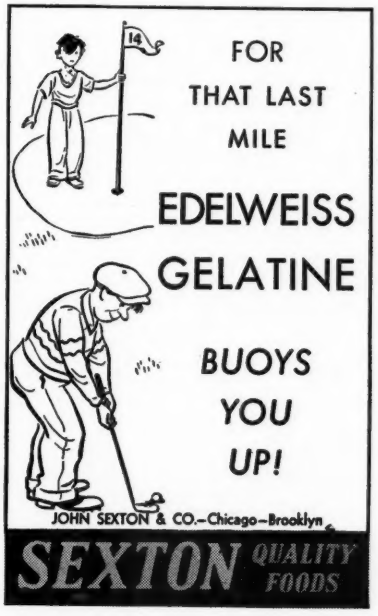
Refresher Courses for Inactive Nurses

Preparation for Special Types of Clinical Nursing

Adherence to Accepted Standards of Nursing Practice and Nursing Education.

"Crisis not only is more tolerable but becomes more constructive in its implications if we understand it."
—W. W. Whitehouse.

THE AMERICAN JOURNAL OF NURSING
1790 BROADWAY NEW YORK CITY
1 year $3 *2 years $5*



Just like a
SHOWCASE

"OXYLID"
Oxygen Therapy Top for Incubators

The entire baby is always in view when you use this better top. Sliding plate-glass doors open wide to lift the baby out. No need to remove the lid. Thermometer and Hygrometer built-in.

For oxygen therapy for infants use Oxylid—the improved oxygen top, and Oxymix—the precision oxygen-air mixing valve that reads direct in percentages of oxygen. Send for our complete description.

THE WOCO INCUBATOR
HAS AUTOMATIC THERMOSTAT CONTROL

This improved incubator for infants has an automatic control that keeps the temperature constant. Easily regulated by the proper attendant, but protected from tampering.

No exposed regulating rheostats or switches.

Water jacketed construction prevents abrupt changes of temperature.

THE MAX WOCHER & SON CO.
Makers of Better Surgical Furniture
29-31 W. 6th St. Cincinnati, Ohio

News Notes of Interest to the Hospital Field

W. E. Avery has been appointed business manager of Piedmont Memorial Hospital, Greensboro, North Carolina.

Mrs. V. W. Bell has resigned as superintendent of the Somerset Community Hospital, Somerset, Pennsylvania. **Adeline Dietz,** assistant superintendent of the institution, has been appointed acting superintendent.

Amy E. Birge, who has been acting superintendent of the Cooley-Dickinson Hospital, Northampton, Massachusetts, since the resignation of **Miriam Curtis,** has been appointed superintendent of that institution.

Marion Black has been appointed superintendent of the new Illini Hospital, Pittsfield, Illinois, which will be ready for occupancy this summer.

Lois Anne Bliss, R.N., has been appointed superintendent of Franklin Hospital, Franklin, New Hampshire, succeeding **Mabel L. Parsons, R.N.,** who resigned to accept the superintendency of the Elliot Community Hospital, Keene, New Hampshire.

Flora M. Burne, who has been acting superintendent of the Augusta General Hospital, Augusta, Maine, since the resignation of **Elizabeth Selden, R.N.,** was elected superintendent of that institution.

Rhoda Carroll has resigned as superintendent of the Pattie A. Clay Infirmary, Richmond, Kentucky, to be married. **Mrs. Orphie Kendall** has been appointed to succeed Miss Carroll.

L. William Coon, formerly assistant superintendent of Meadville City Hospital, Meadville, Pennsylvania, has assumed his duties as superintendent of the Corry Hospital, Corry, Pennsylvania, succeeding **Margaret Bower, R.N.,** who resigned to accept the superintendency of the Community Hospital, Kane, Pennsylvania.

Major Ruth E. Cox has succeeded **Major Inga Saugen, R.N.,** as superintendent of the Salvation Army Women's Home and Hospital, Spokane, Washington.

Lawrence H. Evans is the new superintendent of the Thomas D. Dee Memorial Hospital, Ogden, Utah, succeeding **J. Howard Jenkins** who was appointed superintendent of the Dr. W. H. Groves Latter-Day Saints Hospital, Salt Lake City, Utah. Mr. Jenkins succeeds **Harold S. Barnes,** who resigned to enter the research and production laboratory field.

J. G. Fraidenburg is retiring from active management of the Hermann Hospital, Houston, Texas, and **R. O. Daughety,** who has been assistant superintendent for the past two years, will assume the duties of superintendent.

Dr. Harvey Gollance, formerly director of the out-patient department of the Morrisania City Hospital, New York City, has been appointed deputy medical superintendent of Kings County Hospital, Brooklyn, New York.

Whitelaw H. Hunt has been appointed administrator of the Maple Avenue Hospital, DuBois, Pennsylvania, effective June 23.

Rose L. Mapes has resigned as superintendent of the Montclair Community Hospital, Montclair, New Jersey, and **Ruth N. Schilling** has been named acting superintendent until Miss Mapes' successor is appointed.

Dr. Maynard W. Martin has resigned as assistant superintendent of City Hospital, Cleveland, Ohio, to become assistant director to St. Luke's Hospital, Morningside Heights, New York City, effective July 1. **Dr. Charles T. Dolezal** has been appointed as Dr. Martin's successor.

Wilbur C. McLin, administrative assistant at University of Iowa Hospitals, Iowa City, has been ordered to a year's active duty with the United States Army, as Lieutenant, Medical Administrative Corps, Whiteside Station Hospital, Fort Riley, Kansas.

Albert J. O'Brien has accepted the superintendency of the Lawrence Hospital, Bronxville, New

How Linde Can Help You Hold Down

oxygen therapy costs

Ask for a copy of Linde's "Handbook," or a showing of the Linde motion picture on the accepted practices in handling commonly used types of oxygen therapy apparatus and equipment.

FOR many years, the Linde organization has specialized in the manufacture and handling of oxygen which meets the purity requirements of the United States Pharmacopoeia. Likewise it has co-operated with leading hospitals, physicians, and manufacturers of equipment in studying the mechanical problems of oxygen therapy.

As a result of this practical experience, Linde is able to extend to hospitals technical advice and assistance which helps them use Linde Oxygen, U.S.P. most effectively. For detailed information on how Linde might help your hospital, write us.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
Offices in New York UCC and Principal Cities

LINDE OXYGEN U. S. P.

The word "Linde" is a trade-mark of The Linde Air Products Company

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WHERE THE HECK IS DR. PECK?

Is he in the building? If so, can he be located at once? If not, will the operator know it the moment he enters? Under emergency conditions, the importance of locating doctors swiftly is obvious. Smooth, efficient, day-by-day routine also makes it highly important that every hospital's facilities be fully modern and adequate in this respect.

No matter how large or small the hospital — no matter how simple or complex the signaling problem may be — no matter what the cost limitations — Connecticut can supply the most logical installation.

If you would like the recommendations of a qualified expert, call in your Connecticut representative, or write us direct. This service involves no cost or obligation.

CONNECTICUT TELEPHONE & ELECTRIC CORPORATION
Meriden, Connecticut

For hospitals with several entrances, a typical Connecticut registry system provides an annunciator panel at each entrance. A doctor need not come and go by the same door. The touch of a switch at any station notifies the operator of his arrival or departure. If a call awaits him, a flashing light tells him so the instant he operates the switch opposite his name.

York, succeeding **F. Wilson Keller,** who resigned to become superintendent of the New York Society for the Relief of the Ruptured and Crippled, New York City. Mr. O'Brien was formerly assistant superintendent of the Manhattan Eye, Ear and Throat Hospital, New York City.

Dr. Ferdinand Piazza, formerly medical director of the out-patient department, Harlem Hospital, New York City, has been appointed deputy medical superintendent of the Fordham Hospital, New York City.

Dr. Willard L. Quennell has resigned as superintendent of Norfolk General Hospital, Norfolk, Virginia, effective June 30, and **W. P. Earngey, Jr.,** superintendent of Cherokee County Hospital, Gaffney, South Carolina, has been appointed as Dr. Quennell's successor at Norfolk.

Mrs. Helen B. Ross, R.N., resigned as superintendent of Community Hospital, Kane, Pennsylvania, to accept the superintendency of the Tompkins County Memorial Hospital, Ithaca, New York, succeeding **Earl F. Mitchell,** who resigned on March 15.

Dr. W. W. Staedel has been appointed assistant administrator of Alameda County Hospital, Oakland, California, succeeding **Dr. J. R. Colburn,** who has been called to service as a captain in the United States Army Medical Corps, 159th Infantry.

Evelyn Studley is superintendent of Riverview Hospital, Red Bank, New Jersey, succeeding **Marjorie Messler, R.N.,** who resigned.

Mrs. Violet K. Swain succeeds **Mabel Hyltin** as superintendent of the Soldiers' and Sailors' Memorial Hospital, San Marcos, Texas.

Harold K. Wright, formerly business manager of Grant Hospital, Chicago, is the new administrator of the Methodist Hospital, Sioux City, Iowa.

Little Rock, Arkansas—Construction work on the new Pulaski County Hospital, Little Rock, Arkansas, which will cost $300,000, will be started shortly after July 1.

Washington, D. C.—The Health Security Administration, representing the Capital's voluntary hospitals, proposes the construction of a new Georgetown University Hospital which would be forty beds larger than the present building; construction of a new seven-story Garfield Hospital with an increase of 145 beds over the present capacity; construction of a new Providence Hospital containing forty more beds than at present; the enlargement of Children's, Emergency, Casualty, Episcopal, Columbia and Alexandria Hospitals; and the erection of a new hospital in the rapidly growing Arlington County in Virginia, directly across the Potomac River from Washington.

Ross Garrett, Health Security Administrator, advises that the new construction and the new additions to existing hospitals would increase by eight hundred the present hospital beds in the District of Columbia and vicinity. All of the newly constructed hospitals will be bombproof. The architectural plans for several of the proposed buildings are well advanced. The cost of this huge hospital improvement program would run into millions of dollars.

Miami, Florida—The Jackson Memorial Hospital, Miami, Florida, approved plans for a $17,000 addition to be known as the John Seybold Memorial. Funds for the new addition were contributed to the hospital by Mrs. Seybold, the widow of the man in whose honor the new wing will be named.

Miami Beach, Florida—The City Council approved the issuance of $300,000 in bonds to finance construction and equipping a municipal hospital at Miami Beach, Florida. The bond issue will be subject to the approval of the freeholders at a special election which will be held in July.

Duluth, Georgia—The Joan Clancy Memorial Hospital in Duluth, Georgia, was dedicated on May. 9.

Springfield, Illinois—The board of directors of Springfield Hospital, Springfield, Illinois, has voted to conduct a public campaign to raise $1,100,000 for the construction and equipping of a new seven-story hospital to replace the present overcrowded and outmoded hospital buildings.

Rock Island, Illinois—Under the terms of the will of the late Joseph K. Merk, the "Amelia Merk" fund has been established for St. Anthony's Hospital, Rock Island, Illinois. Principal of the fund is to be used in the care and maintenance of babies left at the hospital for adoption.

Waukegan, Illinois—The Victory Memorial Hospital, Waukegan, Illinois, let contracts for a new addition which will cost $150,000. Schmidt, Garden and Erikson are the architects.

New Albany, Indiana—The New Southern Tuberculosis Hospital, New Albany, Indiana, which was formally dedicated on National Hospital Day, May 12, provides accommodations for 150 patients.

Flint, Michigan—St. Joseph Hospital, Flint, Michigan, owned and operated by the Sisters of St. Joseph, was formally dedicated on May 11.

(Continued on page 127)

CLASSIFIED ADVERTISEMENTS (Continued)

POSITIONS OPEN (Continued)

AZNOE'S-WOODWARD MEDICAL PERSONNEL BUREAU
Ann Ridley Woodward, Director
30 North Michigan Avenue
Chicago, Illinois

ADMINISTRATOR: Lovely New England hospital in desirable location; salary dependent qualifications. H-61

ASSISTANT SUPERINTENDENT NURSES: Large eastern hospital, easily accessible cultural, educational, recreational facilities; $135, full maintenance, duties interesting and diversified. H-62

DIRECTRESS OF NURSES: With excellent personal qualifications; attractive hospital in Boston area; salary open. H-63.

DIRECTRESS NURSING EDUCATION-SCIENCE INSTRUCTOR: (A) Unusually fine opportunity, large southern hospital requiring degree, experience; $140, full maintenance. (B) Numerous opportunities for Nursing Arts Instructors, all sections; salaries $100 to $135, maintenance. H-64

If you are dissatisfied, unemployed, or desirous of making a change, we suggest that you write for application form. Every day we are hearing of more attractive opportunities at increasing salaries, and this seems an ideal time for membership with our bureau.

POSITIONS OPEN (Continued)

INTERSTATE HOSPITAL AND NURSES BUREAU
Mary E. Surbray, R.N., Director
332 Bulkley Building
Cleveland, Ohio

DIRECTRESS OF NURSES: College degree, with executive ability and experience. 275-bed mid-western general hospital. Salary $200, maintenance.

DIRECTRESS OF NURSES: College credits; experience. 120-bed Pennsylvania hospital, with school for nurses. 2 instructors employed. Salary $150

ASSISTANT DIRECTOR OF NURSES: With educational qualifications. 200-bed eastern hospital. (b) 165-bed Sisters' hospital, Michigan. (c) 300-bed Ohio hospital. Salary $135.

NURSING ARTS INSTRUCTOR: Degree; teaching experience. 300-bed University hospital, midwest. Salary $2400 per year.

News Notes—(Continued)

The blessing by the Most Reverend Joseph H. Albers, Bishop of Lansing, Michigan, marked the completion of a project launched twelve years ago.

St. Paul, Minnesota—St. Joseph's Hospital, St. Paul, Minnesota, is planning a new addition and an improvement program to be worked out over a period of several years at an ultimate cost of $200,000.

Kansas City, Missouri—Work on the construction of the new wing and rehabilitation of part of the old building of the General Hospital, Kansas City, Missouri, has been started. The work, which will cost approximately $450,000, will be paid for out of the remaining hospital bond funds.

Cape May Court House, New Jersey—Burdette Tomlin, a native of Cape May county, New Jersey, has contributed $25,000, with the provision that a like amount be raised by citizens for establishing a Cape May County Hospital. The hospital will be known as the Tomlin Memorial Hospital and will be located within a radius of one mile of the intersection of Main and Mechanic streets in Cape May Court House, New Jersey.

Buffalo, New York—Plans have been approved for the construction of a four-story addition to the Millard Fillmore Hospital, Buffalo, New York. The building will cost $445,000, and will add accommodations for 78 patients.

New York City—Dr. Willard C. Rappleye, Commissioner of Hospitals of New York City, recently laid the cornerstone of the new $1,000,000 addition to the Roosevelt Hospital, New York City. The addition replaces a sixty-eight-year-old building recently demolished, and is joined to the ward section of the main hospital. The new unit is five stories in height, containing seven new operating rooms, and will be completed in February, 1942.

Cleveland, Ohio—The Ohio State Legislature has approved legislation to permit submission of a $1,000,000 bond issue for the rehabilitation of the City Hospital in Cleveland, Ohio. This bond issue will be submitted to the voters of Cleveland this fall. Tentative plans call for $600,000 for a new hospital power plant and $400,000 for a new outpatient division.

Columbus, Ohio—The Columbus Children's Hospital, Columbus, Ohio, will receive $25,000 annually from the charitable foundation established by the late Alfred L. Willson, a noted Columbus philanthropist.

Scranton, Pennsylvania—The new $1,000,000 Scranton State Hospital of Scranton, Pennsylvania, was formally dedicated on National Hospital Day, May 12.

Dallas, Texas—The new wing of the Methodist Hospital, which was built at a cost of $100,000, is completed and was opened for the reception of patients on National Hospital Day, May 12. J. H. Groseclose is administrator of this institution.

Houston, Texas—A children's and maternity hospital costing $2,000,000 will be asked for Houston, Texas, and county when the general bond issue is proposed for the city. The new hospital will be a unit of the city-county owned and operated Jefferson Davis Hospital, and will provide accommodations for 400 patients, with new living quarters for interns and additional housing space for student nurses.